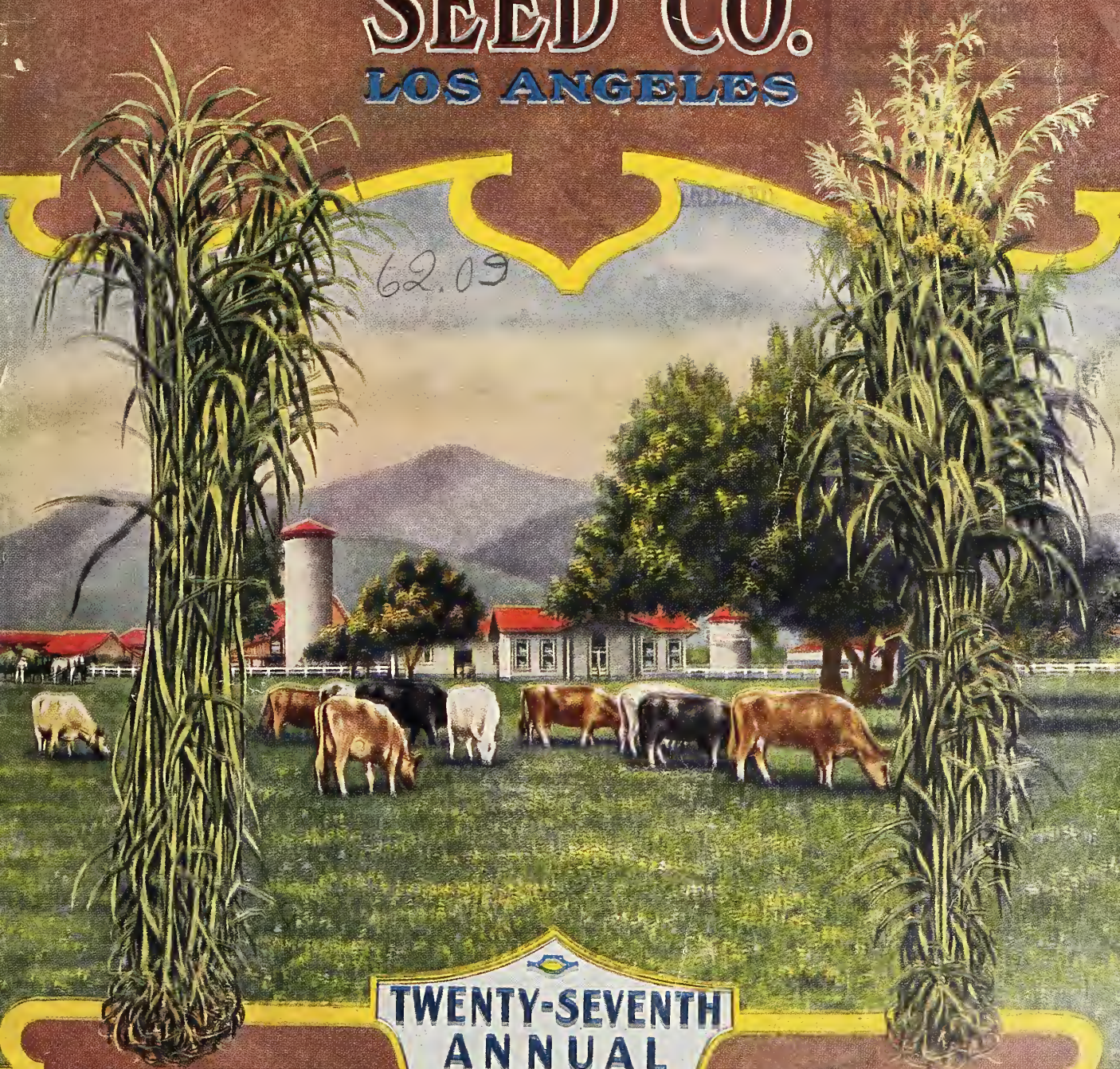


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AGGELER & MUSSER SEED CO. LOS ANGELES



NAPIER GRASS

TWENTY-SEVENTH
ANNUAL
CATALOG
1920

SUDAN-SORGHUM

HOW TO ORDER BY MAIL

YOUR NAME AND ADDRESS.—Be very sure that your name and address are written very plainly on each order. We frequently have orders where either name is not given or address omitted. Also give plainly the R. F. D. number and box, or the street address. We acknowledge all orders by a postcard if not filled immediately. If such acknowledgment is not received, or if the order does not follow at once, write us about it.

CASH WITH ORDER.—The proper way is to send remittance in full to cover order and postage. We send orders C. O. D. only if 25% of the amount of order is enclosed. Plants we never send out C. O. D.

REMITTANCES should be made by Post-Office Money Order, Express Money Order, or by Check. For amounts up to one dollar, clean, unused postage stamps will be accepted. Coin should not be sent by mail. Checks on local banks may be sent, which will be a great convenience to many customers. Checks from outside the state of California will be collected before the goods are shipped. Therefore if you would avoid delay, send bank draft or postal money order. We do not accept responsibility for orders which never reach us.

SHIPPING—We will use our best judgment as to the best way of sending orders when specific directions are not given. On large "postpaid" orders it is better to have them go by express, if your town is on a railroad—it is safer. We prepay express charges on merchandise quoted "postpaid." If special directions in shipping are needed, send them explicitly, and where express or freight office is different from post-office, so state in space on our order sheet.

SEEDS BY MAIL—We send by mail or by express prepaid, all orders for flower seeds, and for vegetable seeds (except beans, corn and peas). We do not pay postage or express charges on onion sets, field seeds, clovers, grasses, bird seeds, beans, corn, peas, tools or plants in large quantities; but we do pay them on other vegetable and flower seeds. Correspondents in foreign countries should add a sufficient amount for postage, at the rate of 12 cents per pound.

THE PARCEL POST APPLIES TO SEED. Postal rates are as follows. Owing to the convenience of having mail brought to your door by the rural delivery system, it is well to take advantage of the low rates.

20 pounds anywhere within the city limits of Los Angeles for 15c.

20 pounds one hundred and fifty miles 24c, and 1c for each additional pound up to 50 pounds.

Nothing heavier than 20 pounds may be mailed farther than 150 miles in one package.

The Eighth Zone includes Mexico and Canada.

ZONE RATES—When it is required that postage be added to the purchase price of any commodity, note the distance you are from Los Angeles, see in which Zone you live. It is then easy to estimate the exact amount of postage required, or ask your postmaster.

DOMESTIC PARCEL POST RATES
On Seeds, Plants, Bulbs, Books, Tools, etc.,
within the U. S. and Possessions

									First Pound or Fraction	Each Additional Pound or Fraction
First Zone, Los Angeles and within 50 miles of Los Angeles									5c	1c
Second Zone									5c	1c
Third Zone									6c	2c
Fourth Zone									7c	4c
Fifth Zone									8c	6c
Sixth Zone									9c	8c
Seventh Zone									11c	10c
Eighth Zone									12c	12c

FOR PARCELS WEIGHING 8 OUNCES OR LESS, containing seeds, bulbs or books only, the rate of postage to all zones is 1 cent for two ounces or fraction. (Over 8 ounces the parcel post rates apply.)

FOR PARCELS CONTAINING FOURTH CLASS MATTER—other than the above—up to four ounces is permitted to all zones at 1 cent per ounce. (Over 4 ounces the above zone rates apply.)

NON-WARRANTY: Note—There are so many contingencies to be encountered in growing plants from seed and in setting out plants that are dependent on the weather and other conditions over which we have no control, that success in planting is not altogether dependent on the seed or plant. We will send out only seed which we believe will grow and produce the kind of plant and variety represented, but:

Aggeler & Musser Seed Co. give no warranty, expressed or implied, as to description, quality, productiveness, or any other matter of any seeds, bulbs, plants or trees they send out, and they will not be responsible in any way for the crop. If the purchaser does not accept the goods on these terms, they are at once to be returned.

AGGELER & MUSSER SEED CO.

Twenty-Seventh Annual Catalog of the AGGELER & MUSSER SEED COMPANY

ESTABLISHED, 1893—INCORPORATED, 1896



ALL of our boys who have gone to the front, we are glad to say have returned with honor, and many of them are with us now for which we are devoutly thankful.

Again our office is running smoothly with greatly increased help made necessary because of increased business of our business: Wholesale, Retail, Mail Order and Plant Departments.

From the start our business never took a backward step. Our customers of twenty-five years ago are among the best friends we have today. Once a customer always a customer has been our aim; the constant and enormous increase in our business is evidence that our policy of making friends by giving reliable seeds, courteous attention and liberal information has succeeded.

It is our purpose to more than ever increase our efforts to safeguard our customers against crop failures.

In this catalog is printed ample information for the beginner and newcomer and under each subject reference is given where further information may be obtained. We also publish circulars and bulletins on special subjects. Therefore by this system of education, the only excuse left for inefficiency is the failure of the grower to avail himself of the opportunities for information here directed to his attention.

We go to the expense and no little trouble to put this catalog into your home expecting you will at least read the subjects in which you are interested.

Therefore if you are interested in growing lettuce, onions, potatoes, cabbage, cauliflower, or tomatoes, read the pages devoted to these subjects.

But whether directly interested or not you may miss some important hint or information if you fail to read every notation.



Home of our Office, Main Store, and Mail Order Dept., 620 So. Spring St., just one block from the Pacific Electric Bldg.



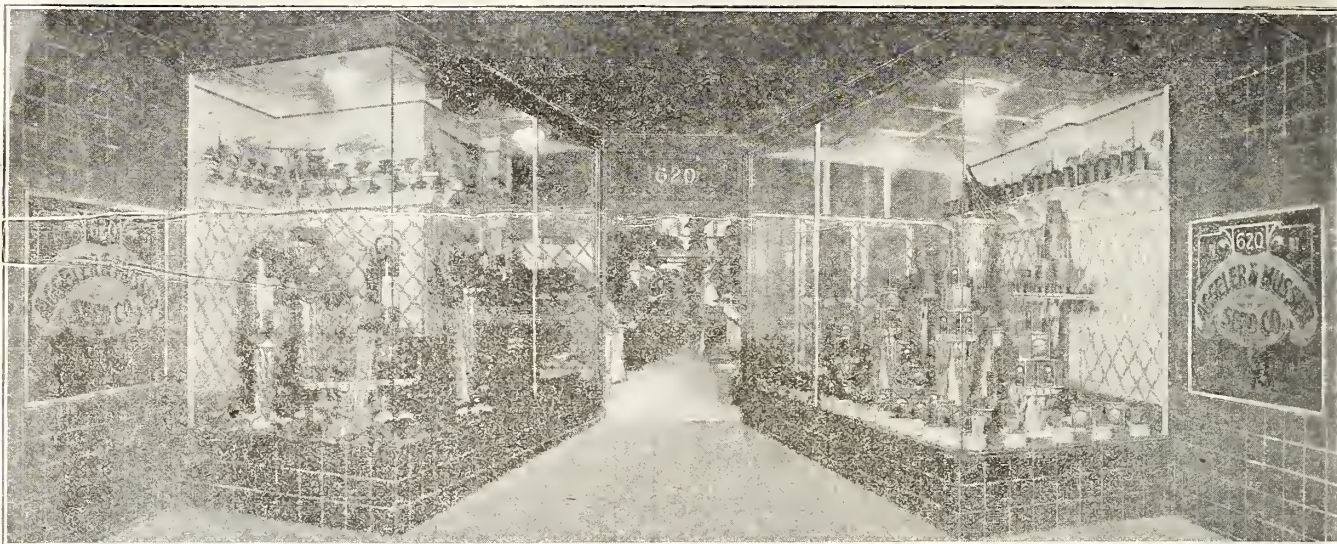
Our float in the industrial parade, 1919. More than 5000 packets displayed.



OFFICE AND ENTIRE FORCE, 1898

These barrels contained the first Triumph Potatoes brought to California

ENTIRE STORE, 1898



OUR STORE AT 620 SOUTH SPRING ST.

It is here you are given courteous attention by Mr. T. E. Stimson and his corps of intelligent assistants. It is here you will find everything essential to the garden, ranch or orchard, poultry supplies and remedies for all kinds of animals.



Our Office

Our office force continues under the capable management of Mr. W. B. Early who has been with us since 1905. He has the direction of an average of twenty assistants, experts in their particular line of work.

These clerks accomplish the enormous amount of work required with the aid of the Mechanical Bookkeeping Machine, Comptometer, Adding Machine, Stenotype, Dictaphone, Typewriter, Addressing Machine and Multigraph, all time and labor saving machinery.



Mail Order Department

Managed by Mr. Roy Long, with ample corps of assistants, whose duty it is to serve promptly and accurately, very often as many as a thousand customers a day.

With a packet-filling machine having a capacity of 30,000 packets per day, they put up more than a million packets each year. To do this without error requires extreme system and efficiency.



Our Market Branch Store

is at 767 South Central Avenue, opposite the Terminal Market. It is a busy place in the early morning hours requiring six experienced men under the capable management of Louis Janus Worthington.



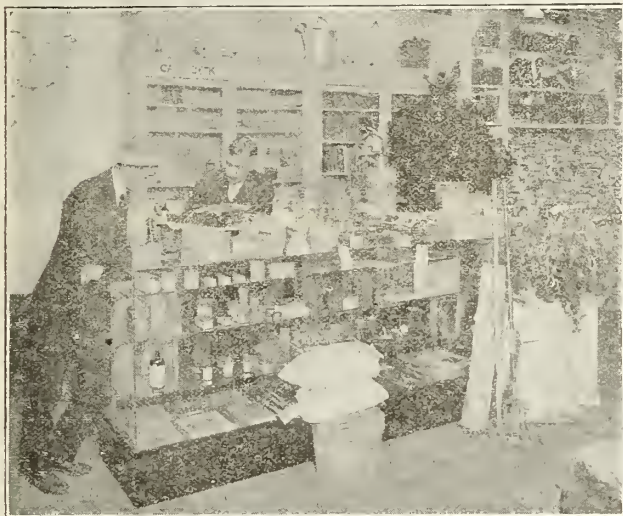
Warehouse and Mill

Our Warehouse and Mill, where all grain and beans are cleaned before putting in stock. Managed by Mr. Carl Scherer.

Everything for the Convenience of Our Customers

A CALL DESK

We have inaugurated what we have termed a Call Desk for the accommodation of the rural population who come to town either for business or to shop. They have not always time to wait for the filling of their orders. Therefore:



**Leave Your Order When You Come to Town
It Will Be Ready When You
Call for It**

A competent person will be in charge of this counter ready and willing to assist you, should you be in doubt as to what you want.

You can order by phone, 60875 or Main 4545, ask for the Call Desk, give your order and state what hour you will call for it.

Or order by mail to avoid delay, addressing Call Desk, Aggeler and Musser Seed Company, Los Angeles, Cal. State just what day and hour you will call.

You will find this method particularly convenient when plants are wanted. They will be ready when you call, thus saving much valuable time.

Remember the Call Desk and take advantage of it.

PACKET SEEDS THAT GROW



Look for this case. If your dealer does not carry Aggeler & Musser Seed Co.'s packet seeds, request him to get them, because we do not put our seeds out on commission. Commission seeds are put up and placed on sale throughout the country in August, long before new crop seeds are harvested. Therefore the seeds are at least one year old before they are put into packets. Our packets are never put up until the new crop seed has been delivered. You are sure to get fresh seeds when you buy from the AGGELER & MUSSER SEED CO.'S CASE.

NOTICE

We will print throughout this catalog some of the many letters we received complimenting our 1919 catalog. It pleases us to receive them because we then know that our effort is being appreciated. It is an incentive to us to improve from year to year. We avoid a repetition of last year's testimonials but when such testimonial describes an article better and helps the grower to decide intelligently, we do not hesitate to repeat it.

THE SEEDSMEN

AN ILLUSTRATED STORY READ IT.

The man who goes into the business of selling seed for the sole selfish purpose of making the most money out of it is not a conscientious seedsmen. He is a trader who buys in the cheapest market regardless of quality and by fictitious values sells at a price out of proportion to the real worth, and too often the seed turns out to be not at all as it is advertised or represented resulting in much loss to the customer. It is because of such practice that the seed trade has suffered calumny, and is often regarded with suspicion so that a grower is apprehensive when he buys seed.

There are reasons for this apprehension. We will undertake to throw some light on the inside work, behind the scenes as it were, of the seed business.

There are in every town one or more merchants selling seed as a side line—it is one of the many household necessities that go to make up a general store. The proprietor knows nothing of the reliability of the seeds other than the label on the package. The customer buys, scarcely knowing any more, and may often be disappointed with the results obtained after a season of hard work—and he may have a feeling that the seedsmen was dishonest.

Co-Operation With Growers

Now, the truth is, there are comparatively few exclusive seedsmen in the country. By seedsmen, we mean men who have given years of hard application to learn the business. Unlike general merchandise that is bought from a factory and sold by label, or by its appearance, seed must be pedigreed. The dealer must buy from a professional grower who knows what types of vegetables are wanted. Professional growers specialize; some in certain varieties of vegetables; some in assorted varieties, selected according to the soil and climatic conditions suited to each particular variety. Many growers specialize in flowers, others in grain and some in grasses. All have a reputation to make and to maintain if they would succeed. The seedsmen know these growers and their reputation for reliability and are seldom deceived by them. The result is that seeds are becoming more and more reliable from year to year through this intelligent co-operation of seedsmen and grower.



A Corner in Onion Seed

THE DUTIES OF SEEDSMEN

The seedsmen's duties do not end with the buying of seeds; he must educate the customer. Probably more than 75% of the errors and disappointments are because of the lack of knowledge on the part of the buyer who has seen good results of certain crops and fails to note the time of planting, climatic and soil conditions under which these crops were grown. He buys and plants the same kind of seeds, probably out of season and under his own conditions, which may be entirely different, with the result that there is whole or partial failure which he promptly attributes to inferior seed.

Therefore, it is the seedsmen's duty to safeguard the customers against such error by advising them to plant the right seed at the right time under right conditions.

THE CATALOG

Many seedsmen attempt to do this through the catalog, but the space is too expensive to enter into detail; therefore, tables have been compiled to cover all the general rules of planting, etc., but every rule has its exceptions, and no table can be compiled to meet all conditions. Here is an idea of some of the expense of the catalog. With postage at the rate of one-half cent for each ounce or fraction thereof, a seedsmen will crowd to the limit of six ounces to obtain the three cent postage—a few words more may mean another page or two requiring an additional fraction of an ounce which requires an additional cent for postage; also additional expense for more paper and labor. Therefore, on one hundred thousand catalogs a few lines more means an additional expense of \$1000 in postage approximately \$500 in paper and labor, a total of \$1500. This explains why seed catalogs are usually printed in type and crowded at that.

SEEDSMEN AS OBSERVERS

Very few people are interested in everything in the catalog, but many growers specialize on certain crops. In order to reach these growers with detailed information concerning these crops, up-to-date seedsmen have had printed circulars or bulletins on various subjects that these growers may have for the asking. The seedsmen, because of the wide scope of the work, is of necessity the greatest up-to-date observer or experimenter.

Reports come to him from many growers, often because of extraordinary success, but more frequently the failures are reported, and it is up to the seedsman to know the cause of such failure. Here are some of the causes.

SOIL

Not chemically or physically adapted to the requirements of the crop.
Not properly prepared.
Too much or too little moisture.

CLIMATE

Variety planted out of its season.
Unseasonable weather.
Extremes of heat and cold.
Excessive rain or drouth.

CULTURE

Variety not adapted to conditions.
Improper planting.
Improper cultivation.
Improper irrigation.
Improper fertilization.
Inattention to insects and diseases.

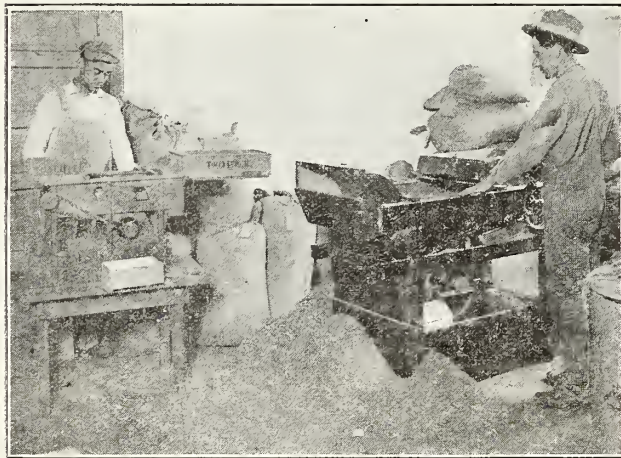
SEED

Unwise selection of variety.
Inattention to purity and germination.
Indifferent about pedigree and source.

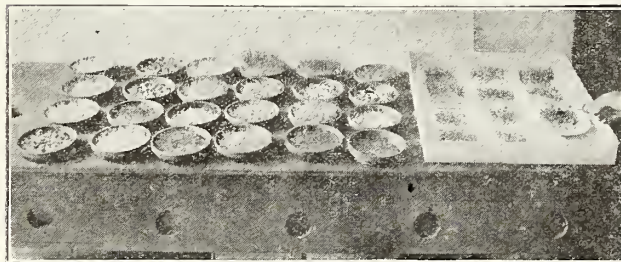
Thus every grower is the experimenter, the seedsmen the observer which gives them a wide range of practical knowledge from actual experience and education. This knowledge is passed along through the medium of the catalog.

SAFEGUARDS AGAINST CROP FAILURES

Mills of Every Size



Seed Cleaning and Stock Room. Managed by Mr. A. L. Tunison



For Testing Seeds

We have with us a graduate from the agricultural college at Davis, whose duty it is to test all seeds when they come to us and again in six months a general test is made. You can write us at any time for a germination test on any seed you contemplate buying.

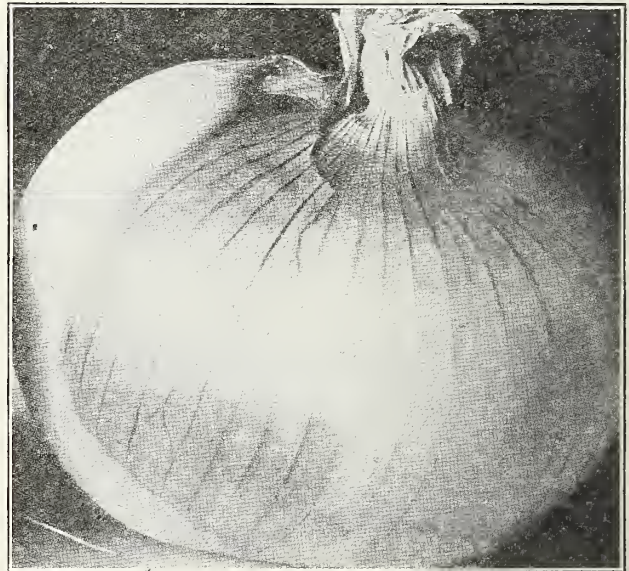


All Peas and Beans Are Hand-Picked

COST OF SEED

The customer often complains that the price he pays is out of all proportion to the price he gets for apparently the same article.

One dollar a pound for wheat sounds like a patent royalty, but no doubt the grower devoted several years in selecting and caring for a very small acreage until he had a commercial quantity. It is not convenient for him to clean, advertise and sell it through the mail in small quantities—he has not the time or equipment to do so. The seedsmen have all these; it is his business; therefore, he buys the grain at two-fifths of the selling price; re-cleans it, losing considerable in waste at a high proportionate expense because of the small quantity. It is then advertised at great expense, put up in small packages and sent out post-paid at \$1.00 per pound. If he has sold less than 1000 pounds he has lost money, for his advertising and other expense has been too great.



White Australian Onion, perfected after ten years of painstaking effort. See page 40.

(Onion seed at \$5.00 or more per pound)

The price of onion seed, in common with the price of other varieties of vegetable seed, varies with the season, and will in a favorable season yield as much as 600 lbs. per acre or often as low as 25 lbs., with an established average of 200 lbs. per acre.

It requires two years to produce onion seed. One year to grow bulbs and another to produce the seed. When onions are selling at four cents per pound, it costs \$200 to plant one acre for seed, and the temptation is strong to sell the onions rather than go to the expense and risk of growing seed, and wait another year for cash returns. Under such conditions a professional onion seed grower can be considered in no other light than an extraordinary philanthropist. He has contracted to grow seed and if responsible he must do so. It is a matter of record that irresponsible growers have ignored contracts and sold their bulbs.

When seedsmen buy seeds from professional growers they get clean seed and have no other expense, but when seedsmen buy from unprofessional growers at ten cents per

pound and sell it at twenty-five and thirty cents the grower has a feeling that he has been unfairly treated. He does not consider that before thirty cents is obtained the seedsmen have had the expense and waste of cleaning, packing, clerk hire and often postage.

The public generally will prefer to buy seed from a grower at eighteen cents per lb. rather than to pay seedsmen twenty cents, believing that they have saved two cents per lb., when the truth is they have been greatly deceived because 10%, and often more, is chaff and dead seed, resulting in a poor stand and poor crop that cost just as much to grow as a good crop; besides, unclean seed is always more difficult to sow.

RELIABILITY OF SEED

Another feature is that a professional grower always rogues out all plants that are not true to the type of vegetables he is growing. An unprofessional grower never does this but often sells the best marketable vegetables, allowing only the unmarketable culls to go to seed with the weeds because he has not had time to destroy them.

An unprofessional grower has no reputation to maintain; often no responsibility, and too often grossly dishonest, misrepresents where variety cannot be distinguished by appearance in order to get the higher price of the better variety.

CAUGHT NAPPING

But here is an incident where a seedsman was unawares. Several years ago he bought seed from a very respectable rancher who had extra fine casabas on the market. This seed proved very satisfactory. The following year he bought seed from the same man who represented it to be of the same purity as before. But it turned out to be hybridized with a musk melon which he had replanted where the casabas failed to grow. The result was that many growers lost money and the seedsman suffered in reputation.

DISHONEST SEEDSMEN

Any seedsman who will pursue a policy of carelessness in buying; or a policy of dishonesty in selling, cannot endure in business beyond a third, and possibly a fourth, year, for the reason that unreliable seeds have given them such unfavorable advertising that they have not money enough to offset it by misrepresentation in printer's ink; nor can they endure long enough to live it down.

SUCCESSFUL SEEDSMEN

Successful seedsman must first of all know their business. Must be honest so that their house will have a reputation for reliability. They must be educators so that their customers can buy intelligently.

Seedsman must be philanthropists because they not in-



The most complete seed cleaning mill on the Coast. Managed by Mr. Wm. Turner

CLEANING AND RE-CLEANING SEEDS

We have the most complete and best equipment in the city for cleaning and re-cleaning seeds of all kinds and of every description. At an expense of several thousand dollars we have installed three Clipper fanning mills, one suction cleaner, and the lately invented Myers Gravity Separator, which is the last word in seed cleaning machinery. It readily separates the good seed from the bad by a process of gravity. Every employee connected with the house has instructions to see to it that no unclean seed is allowed to pass. Therefore we request you to report to us any violation of these instructions.

A DISHONEST GROWER

We here publish word for word a correspondence we have had with a grossly dishonest unprofessional grower, omitting the name and postoffice, but the correspondence is in our files to be produced if need be:

"Aggeler & Musser Seed Co.

"I will have cantaloupe seeds 'Pollock No. 25 grown at120 acres and the cantaloupes in the neighborhood are the same variety and no big melons, the seed came from Colorado. Are you going to be in the market for seed of this variety this fall, if so, what price do you pay for them? I will have about a ton, or more, of seed. If this is of interest to you, be pleased to hear from you. Awaiting your reply.

Our Reply

"Mr.
"Replying to your letter offering cantaloupe seed, would advise that we will be in the market for 500 lbs. Your description is satisfactory, but we never buy seed without having seen them growing. Our representative will be in your district in July and we will have him call on you and inspect the fields."

REPORT

"Aggeler & Musser Seed Co.:

"I called on Mr. in regard to seed. He did not have time to go out to the field with me so I went to a packing house and they told me Mr. had nothing to do with melons except to take culls from the packing shed for hog feed."

So the seed was to come from culls.

This particular incident is not an isolated case; they have come to us with such frequency that we are guarded and it is seldom that we are caught napping.

COMPLIMENTARY

W. A. PATTON, Missouri

As I am almost 74 years old it would seem that I had lived long enough to have learned all there was worth knowing but since I came in possession of your twenty-sixth catalog, 1919, I am convinced there is still lots to be learned. I have concluded to take you at your word and keep your catalog for future reference, as it is a sure guide to the gardener.

frequently have opportunities to do the public a great service without reward.

SEEDSMEN'S EQUIPMENT

In order to best serve the patrons; to avoid inconvenience and losses, they must have facilities for fumigating and vats for dipping; seed testing facilities; seed cleaning facilities, and trial grounds. Observations and records must be kept—not only of their own trial plot but to the seedsman every garden and every ranch is a trial ground from which they make their observations and get their experience, which is a never-ending round of work but always interesting, and in this connection is philanthropic work.



A Demonstration of Millets, Grasses and Sorghums on the 1500 block west 16th St. It is worth your while to see it.

SEEDSMEN AS BENEFICIARIES

All of this observation and experience is compiled in the catalog or in special circulars or bulletins which are always distributed freely to the public, whether customer or not, and always postpaid.

The agricultural departments of the several states and of the United States are doing all these things at great expense, and the expense to the seedsmen is in greater proportion but the benefits to the public are vastly greater because of the more liberal distribution of educational literature, and much of it without seeking any direct benefit.

THE SEEDSMEN ARE AMONG THE GREATEST UP-BUILDERS IN THEIR RESPECTIVE COMMUNITIES.

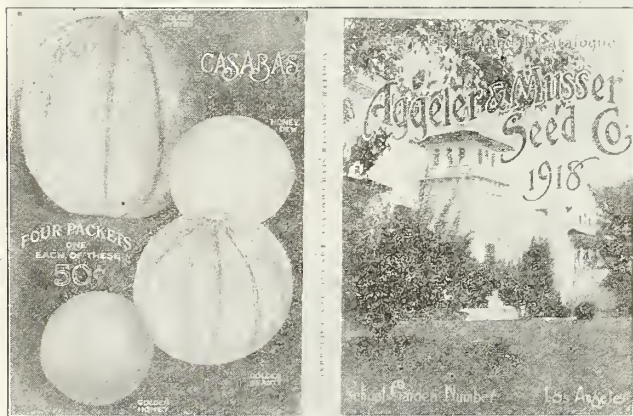
The year of 1918 Los Angeles County, California, was, according to the report of the agricultural department, the "richest agricultural county in the United States."

Without doubt the largest factor in bringing this about is due to unselfish and painstaking work of seedsmen who within twenty years, either by discovery or by creation and selection, introduced by a system of education, often at great expense, such varieties and types of vegetables that have made it possible to ship them throughout the United States and elsewhere, adding many millions of dollars to the agricultural worth of Southern California; besides, establishing such a reputation that vegetables from Southern California are standard throughout the country.

By introduction of the Anaheim Chili, and Pimiento Pepper alone her seedsmen have made possible the building up of vast canning and dried Chili industries which have added millions of dollars to the growers, shippers and canners. The same may be said of other vegetables, notably, Los Angeles Market Lettuce and Pearl Cauliflower.

Her seedsmen have added largely to the wealth of Southern California by growing many of their varieties of seeds at home instead of importing them.

We shipped the first carload of seed Lima beans grown in Los Angeles county, thereby starting an industry worth many hundred thousands of dollars to the growers of the county.



Seed Catalog

FAME ABROAD

One market gardener from Florida writes: "Why is it I can find no market in New York for my cauliflower after the California article arrives?"

Another buyer ordered a car of Los Angeles Market Lettuce and when the car arrived he opened it, examined the crates and wired back in disgust, "That he had ordered lettuce and not cabbage." Another examination revealed it to be Los Angeles Market Lettuce. To her seedsmen's credit is due for making possible such a reputation, and making possible the enormous financial returns from such crops as are each winter being shipped to the eastern consumer.

A WINTER GARDEN

Southern California is the winter garden for the northern and eastern United States, and it is due to her seedsmen as much as any other factor that the east have found it so.

During the strike of August 1919 of the several railway unions which declared they would starve Los Angeles into submission, Mr. Frank Wiggins, Secretary of the Chamber of Commerce, said: "They might as well try to starve a boy by locking him up in a pantry filled with jam." This remark was prompted by the fact that Southern California was at that time daily shipping out of its territory twenty carloads of surplus fruit and vegetables, and the cost of living while the strike lasted was appreciably lower. It was the outside that suffered for lack of their usual supply.

The seedsmen's part in this aggregation of wealth was the introduction of—White Rose Potato, Pearl Cauliflower, Los Angeles Market Lettuce, the Casabas, Golden Self-Blanching Celery, Watermelons and Cantaloupes. Each one of the above named items are every year being shipped east in thousands of carloads. Each item is worth a million dollars or more to the Southwest. Besides the above are shipped thousands of carloads of mixed vegetables. The selection and introduction of these marketable types is due to the wide-awake seedsmen.

CALIFORNIA LEADS

California at home is better supplied with greater abun-

dance of choicest vegetables than any section in the United States. Her ranchers are growing the best crops with the least failures, and by the system of crop rotation the soil is being improved each year. For this, much credit is due to her seedsmen.

IN SUMMING UP

Seedsmen must, if they would succeed—

Know their seed and the types they will produce.

Know how to grow them and grow what they can.

Know where to buy what they cannot grow.

They must clean, label and segregate beyond the possibility of mixture, all seeds in stock.

They must train their help to such a degree of intelligence that they will make no mistakes, and that they can aid the customer to an intelligent selection of seeds.

They must, by a system of education through their catalog and other printed matter, inform their patrons of every avenue to success and to avoid every road to failure.

Be unselfish when giving advice, guided always by the hope of benefit to the customer even at the sacrifice of a sale or of profit.

NO SEEDSMAN WILL SUCCEED—

Who will let their customer buy any certain variety of seed knowing that variety will cause serious loss.

Any seedsmen who will be so selfish that in order to make a profit will knowingly substitute one variety for another is dishonest and the punishment will be the loss of one or more customers and more unfavorable advertising than a thousand dollars' worth of printer's ink will offset.

Seedsmen who do these things, innocently or ignorantly, had better study their business, or ignorance will bankrupt them. For seedsmen to deceive their customers, knowingly or unknowingly, is to invite disaster and may cause a loss to a community in one season of more than one million dollars.

THE UP-BUILDER

The seedsmen must know how and where to buy about 200 varieties of garden seeds, about the same number of field seeds, twice as many varieties of flower seeds and unlimited varieties of plants. He must be able to advise their adaptability as to soil, climate and culture.

He must understand how and where to buy insecticides, sprayers, fertilizers and implements for every purpose and instruct when and how to use them.

The seedsmen must know how to deal intelligently with each customer according to his agricultural pursuit, whether Gardener, Florist, Rancher or Nurseryman, whether Stockman or Dairyman, Shipper or Canner.

He must anticipate all their requirements and be able to advise on all agricultural subjects. He must lead and direct as well as follow.

The seedsmen must search the world over for any new thing, select the more meritorious and introduce them intelligently.

His seeds must be clean, pure and of high germination and never disappoint a planter.

He must test all seeds, destroy all insects, remove all weeds.

Have a trial ground and demonstration plot.

He is expected to advertise intelligently. To write Bulletins on all subjects in order to safeguard his customers.

He publishes a catalog that costs a fortune; in it, tells all he knows and mails it free to several hundred thousand people.

The reliability of the seeds he sells are a source of much wealth and satisfaction to the grower.

His introductions are worth millions of dollars annually. His educational propaganda is of incalculable value.

A conscientious, painstaking, seedsmen is an educator and up-builder in his community.

CONTRIBUTED BY MR. RISSOR WHO IS ASSOCIATED WITH THE CALIFORNIA VEGETABLE UNION.

The wonderful growth and present magnitude of the California Vegetable industry is a matter of surprise to all who are not thoroughly familiar with the statistics of production. The rich soil, the abundance of irrigation water, and above all, the superior climate, combine to give California growers special advantages in the production of vegetables for the big consuming markets the country over.

During the season 1918-19, there were shipped from Southern California alone 23,000 carloads of vegetables, which represents the largest output on record. As an indication of the way in which the market demand for these products has expanded, it may also be said that growers of many of these products received exceptionally high prices in spite of the heavy movement. Especially large profits were made on celery, onions, lettuce and spinach. California produces more asparagus, more artichokes, more cantaloupes, more cauliflower, more lettuce, more late onions than any other State. Its shipments of mixed vegetables are larger than the shipments from any other state. It also ranks among the largest producers of celery, potatoes, tomatoes and cabbages.

REDUCED TO COIN MEANS THAT SOUTHERN CALIFORNIA EXPORTED VEGETABLES TO THE VALUE OF \$25,000,000 AND MORE THAN DOUBLE THAT AMOUNT IN FRUIT

All California is One Big Vegetable Garden, the Largest in the World

Get Ready for Big Business

Political economists have always taught that a war in a foreign country would stimulate industry at home. No doubt that reasoning is correct, but there never was a situation like the present. All former wars have been insignificant in comparison with the great struggle just ended, indeed the several wars now waging are of so little moment in comparison that the public scarcely knows of them.

But the vast destruction of the past five years and present lack of production and construction throughout Europe, is America's opportunity. But so vast are our resources we scarcely realize that millions of dollars worth of food is being exported every month.

It has been proposed to prohibit the exportation of food. To this we answer decidedly, No! It is America's opportunity and let us increase production sufficient to meet all demands. Thereby helping to feed and build up Europe and bring prosperity to ourselves in a constructive way. Every agency that would now block production is a blind and mistaken policy.

Let common sense prevail and get ready for big business. The opportunity is at hand. The farmer is the producer of food and raw material, therefore he is the first in reconstruction and first to benefit from the present situation.

The Great Southwest

Where fifty thousand acres of beans are under one management on one ranch. Where ten thousand acre fields of beets and grain are numerous. Where one thousand acre patches of wheat, barley, beans, cotton, rice, sugar beets and vegetables and fruit are not uncommon and one hundred acre lots of cabbage, cauliflower, peas, asparagus, onions, carrots, beets, turnips, corn, melons, lettuce and celery are the standard size.

It is the grower with one hundred to five hundred acres who is making the big money in cauliflower, cabbage, onions, lettuce and celery.

One successful grower who had cleared \$50,000 in 1917 was asked if he would not break down working so strenuously, replied, "I am not working any more, I have now six hundred acres in cabbage and cauliflower and expect to clean up \$80,000. I've cut out all hard work."

(How does he do it?) He does it by specializing.

There are many who specialize in one or two certain crops and doing it with comparative ease, and making big money. Many of these growers contract their crops from year to year with canners or shippers.



A BIG VEGETABLE GARDEN

The picture illustrates what one may do in a comparatively small garden. All of these vegetables were grown in the garden of the Loma Linda Sanitarium. The same has been reproduced on a larger scale in the garden at the Soldiers Home, at the County Farm and at the City Farm on Los Feliz Road.

We recommend that gardeners for large ranches, sanitariums and public institutions consult these pages and emulate this garden.

Amount of Seed Needed for Home Garden

For successive planting throughout the season for a family of four the following are the approximate quantities of seed that should be purchased for a home garden on half a lot 50x150 feet in dimension.

- 1/2 lb. Beans—Stringless Green Pod.
- 1/2 lb. Pole Beans—White Seeded Kentucky Wonder.
- 1/2 lb. Lima Beans—Fordhook Lima.
- 1/4 lb. Lima Beans—Monstrous Lima.
- 1 oz. Beet—Egyptian.
- 1 pkt. Cabbage—Glory of Enkhuizen.
- 2 pkts. Carrot—Danver Half Long.
- 1 pkt. Cauliflower—Snowball.
- 1 pkt. Celery—Dwarf Golden.
- 1/2 lb. Sweet Corn—Oregon Evergreen.
- 1 pkt. each Cucumber—Klondike and Lemon.
- 1 pkt. Egg Plant—New York Purple.
- 1 pkt. Kale—Siberian.
- 1 pkt. Chard—White Swiss.
- 1 pkt. Lettuce—Iceberg for Summer.
- 1 pkt. Lettuce—Los Angeles Market for Winter.
- 1 pkt. Muskmelon—Tip Top.
- 1 pkt. Watermelon—Klondike.
- 1 lb. Onion Sets—White or Yellow.
- 1 pkt. Parsley—Moss Curled.
- 1 pkt. Parsnip—Devonshire.
- 1/2 lb. Peas—Admiral.
- 1 oz. Radish—Icele.
- 1/2 lb. Spinach—Winter or Bloomsdale.
- 1 pkt. Squash—White Bush Summer.
- 1 pkt. Squash—Banana, Winter.
- 1 pkt. Tomato—Ponderosa.
- 1 pkt. Turnip—Purple Top Globe.

When to plant—See inside back cover.

Plant Cucumbers and Muskmelons as far apart as possible.

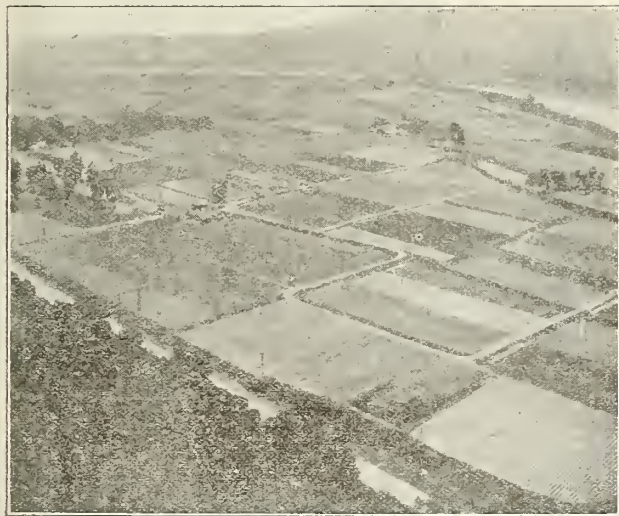
We will mail the above list of seeds to any address for \$2.00.

The entire supply of string beans, bush Lima beans, sweet corn, lettuce, peas and radishes should not be planted at one time, but successive plantings two or three weeks apart should be made, so that a fresh supply of the vegetables may be had throughout the season.

Of early Irish potatoes fifteen to thirty pounds will be required, and of late potatoes twenty to forty pounds.

ISAMI MORITA, Hawaii

I have received your seeds and they were O. K. I was surprised to see nearly all the seeds that I planted grow up fine. I therefore think that your company exports the best fresh seeds under the sun.



Bird's Eye View of a 200 Acre Vegetable Garden

But it is the man with one hundred acres or less of diversified crops who is the great majority and his success is measured by his capabilities, (Brain and Brawn). To this class belong the Market Gardeners.

The American with small acreage is giving his attention to special crops, and rotating them, finding it easier and more profitable to do so, because he becomes expert in that particular line by studying every phase of it, whether it is vegetables, flowers, or fruit. It is this class of gardeners who contract with Hotels, Restaurants, Cafeterias, Sanatariums, etc. This is usually a satisfactory way, he lives in the suburbs and enjoys the comforts of a happy home with pleasant surroundings. Such a home is not complete without poultry, rabbits, goats or other pets.

But no matter how large or small the ranch, nor what is grown, they all find Aggeler & Musser Seed Company, headquarters for the best supplies in every line.

School Gardening Made Easy

Write Department of Agriculture, Washington, D. C., for Farmer's Bulletin No. 936, "The City and Suburban Vegetable Garden."

Write Department of Agriculture, Washington, D. C., for Farmer's Bulletin No. 255. Also No. 818. They are free.

Thanks to the very commendable work of agriculture now directed at the public schools throughout the country, we look to see better conditions prevail in the homes.

Many a capable man with good intentions would have a garden if he only knew the simplest "first aids" to gardening. The next generation will know, and because they know, their homes will be more beautiful, and they will be more prosperous, for a good garden will supply possibly all and more vegetables than the family will consume. A very small plot of ground will do wonders toward giving the family more and better vegetables, besides reducing greatly the cost of living, and making better men and women of our boys and girls.

To encourage this kind of improvement for country homes, that life may be more enjoyable to the newcomer, unaccustomed to the solitude—

To encourage the city wives and daughters to transform unattractive homes into beautiful cozy spots that may well be the envy of their more wealthy neighbors, (such beauty spots always proclaim louder than words the refinement and culture of the people living therein).

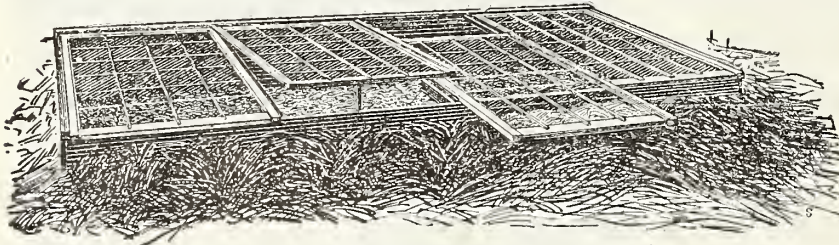
To encourage the more youthful members of the household and to co-operate with the teachers where gardening is taught—

It is to aid this work that we have made of this catalog a veritable encyclopedia for the gardener and rancher.

A good Home Garden will do more to help lower the high cost of living than any other agency. The benefit quickly follows the planting time and is constant throughout the year, besides giving healthful and enjoyable recreation to the entire family.

Get busy with your garden at once!

There never was a time more urgent for a home garden.



Hot Bed

Every garden should have a hot bed in a sunny corner for the purpose of raising plants for early vegetables.

Dig a trench east and west twelve to eighteen inches deep. A bed three feet wide and ten feet long is large enough for any family garden. Board twelve inches high on the north side and six inches high on the south side. Fill twelve inches deep with strawy manure or weeds, moisten slightly, pack tightly, cover three inches deep with sandy loam; if the loam is mixed with some finely sifted sheep manure or leaf mould, it will greatly improve it. Sow the seed in rows across the hot bed north and south so that the sun will light both sides of the row during the day, making strong, healthy plants. Do not sow too thickly nor more deeply than one-fourth inch. Cover the hot bed with glass, not muslin. No less than twelve inches should exist between the glass and the soil, because plants must have air. Sprinkle always in the morning, or, if necessary to do so in the evening, use warm water. Sprinkle sufficiently to moisten the soil, but not enough to cool the manure, which would then become chilled and be worse than no manure at all. Raise the glass during the day, and close at night. Without ventilation the plants may be scalded during a warm sunny day. Before transplanting from the hot bed, all plants should be hardened by exposing them to the sun for several days. Exercise proper judgment, lest they be destroyed.

THE SOIL

There are two kinds of soil in California that baffle the new gardener, and often puzzle the man of experience. One kind is the raw un-reclaimed soil that packs so hard that vegetation cannot take root. The other is soil as pliable as sand, and ought to grow anything but just will not. Both require the same solution. They need life (humus) and there is nothing better to put life into soil than stable manure or a green manuring crop plowed under at the right time, and to thoroughly air the soil by cultivation.

For your garden gather weeds and dig them under. If there is no stable manure available, any decaying vegetation plowed under will add humus. For the field, grow rye, vetch, melilotus, or barley during the winter months, and in the spring plant Sorghum, Sudan and Cow Peas. All these crops will furnish feed for the stock as well as humus.

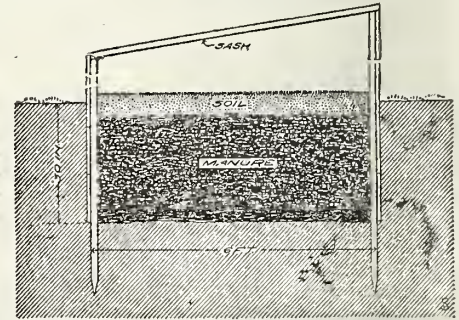
To grow well a plant requires a deep, mellow, moist soil, supplied with the right amount of air, heat and available plant food. An important step, then, in the successful growing of vegetables is to prepare the soil in such a way that it will be congenial to the best root growth. The soil for truck crops is a rich sandy loam—a soil containing varying proportions of clay, sand and organic matter. A good vegetable soil can be made in most back yards by intelligent management. (Continued at top of Next Page).



Maguolia Street School Garden at 17th and Orchard Sts.

This is one of the best gardens in the city notwithstanding they have exceedingly unfavorable soil conditions to contend with. This class is conducted by Miss Ethel A. Hubbert.

This page of our catalog has proven so popular that we decided we could do no better service than to give special stress to the school garden work, now so ably carried on in conjunction with our common school education. The name of the founder of this branch of education should be in history with that of Thaddeus Stevens, the founder of our Public School System. The teacher of Agriculture in the public schools will do more for the betterment of humanity than any other branch of education.

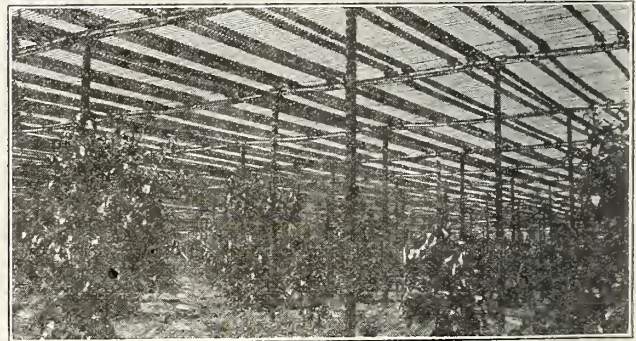


Cross-Section of Hot Bed

With this idea in view we have made of this catalog, a primer for the school garden work.

LATH HOUSE

Lath houses are used to protect plants against the extreme heat, cold or winds. Four-foot laths nailed into frames on 1 in. by 3 in. by 12 feet, pine, are used. The height of a lath house varies from 8 to 12 feet. Lath houses are used for starting seedlings, cuttings, and the growing of Ferns, Smilax and Asparagus plumosus. They are also used to shelter young plants and to transplant tender stock in boxes.



An Avocado Orchard in a Lath House

Lath houses in Southern California contain some very fine collections of ferns, begonias and palms. Lath houses can be made in any style to conform with other buildings. We do not recommend the use of lath houses for vegetable plants, but we find it very valuable in the propagation of eucalyptus, cypress, acacia and most all evergreen shrubs and trees.

(Continued from Page 8)

Clay and Adobe Need Skill

Of all the garden soils, clay is the most easily injured by tilling when it is not in the right condition as to moisture. If worked too wet, the particles all slide together into a compact mass. On the other hand, if worked too dry, the clods are hard to break. When clay soil is in the right condition to work it will crumble apart if squeezed in the hand. If it sticks together it is too wet. Clay soil should never be worked when it is wet, not even with a hoe. This is an important lesson for all gardeners.

In a deep, mellow soil, the plants grow more quickly, since larger root systems can be developed and more food and moisture taken in. A deep, mellow soil affords a larger reservoir to hold rain needed during the droughts that come in the growing season. Such a soil is warmer and contains air needed for the growing roots and for the bacteria that cause decay of organic matter or gather nitrogen from the soil air.

A Word About Sowing Seeds

Many seeds are small and the germination weak, therefore, sow them very shallow, often not more than one-eighth inch deep. This is because the germ or sprout must have air and light. If this is denied by too deep sowing, it dies before it reaches the surface.

In order to assist small or weak seeds to grow, it is advisable to plant plentifully, because the many seeds will give strength to raise the soil where one could not do so.

This advice applies particularly to beet and melon seeds, but it is applicable to all small seeds. It is easy to thin out the surplus plants. A good general rule is to plant seeds to a depth equal to from three to five times their diameter, make ridges to stand about six inches high, flattened to about ten inches wide on top and twelve inches between ridges. Drill the seed or transplant on each side of the ridge. Irrigate in the furrow between the ridges. By this method two rows are irrigated with one furrow, and you will have only one furrow to cultivate after each irrigation. It is easy to see the advantage of this method over the usual way of drilling on level ground and irrigating each row, often flooding the plant, which is harmful, particularly during the heat of summer.

A Few Words About Irrigation

In seed beds where small seeds are sown thickly, it is necessary to sprinkle the beds, never flood them. During the winter months, sprinkle only in the morning when the water is warmer than the dew. This allows all the heat that accumulates in the soil during the day to be retained far into the night. During the hot summer months, it will be necessary to sprinkle in the evening to revive the plants after a hot day.

**Irrigating Sweet Potatoes**

When making a garden, whether for drilling or planting seed, or setting plants, always wet the ground thoroughly. GIVE IT A GOOD SOAKING TO A DEPTH OF TWO OR THREE FEET OR MORE. As soon as it is tillable—that is as soon as it can be spaded and pulverized, or when the soil will not stick to the spade, dig it ten to twelve inches deep, put stable manure into every other furrow and turn it under. This is needed for humus and fertilizer, either in sandy or loamy soil, and more especially in adobe soil. Pulverize the soil thoroughly and rake it evenly. While it is still moist, plant seed from one-fourth inch to one inch deep, in heavy soil, and a little deeper in sandy soil. Planted this way, almost any variety of seed will germinate and show above the ground in from four to ten days, without irrigation. Never sprinkle a new garden before the plant is above ground, nor after if you can irrigate between the rows. It is far better to irrigate than to sprinkle, and much less labor. Always mulch the soil after each irrigation, as soon as it mulches readily, but no sooner. To allow the soil to bake after irrigation is far worse than no irrigation at all.

To sprinkle the garden slightly each day during the summer months is of little value unless the ground is also thoroughly irrigated once each week or two, according to the nature of the soil. Slight sprinkling refreshes the foliage, but may not penetrate the soil more than one inch deep. Thus as the under soil dries, the roots get no moisture. The plants suffer, and you do not suspect the cause because you see the foliage so green. This is a common fault, and the cause

By Henry Ward Beecher

The following article, written by Henry Ward Beecher, appeared in "The Indiana Farmer" in 1835. It was read at Riverside before the Horticultural Convention last summer by Mayor Horace Porter of Riverside.

"We understand very well that every region must fashion its system of agriculture upon the nature of its soil, its climate, etc. The principles of agriculture may be alike in every zone, but the processes depend upon circumstances. It would be folly for a new country, without commerce, to imitate an old country with an active commerce; it would be folly, where land is cheap, abundant, and naturally fertile, to adopt the habits of those who are stunted in lands, who have a redundant population, and who find a market for even the weeds which are indigenous to the soil. The husbandry of Holland is suited to a wet soil, and of England to a humid atmosphere and a very even annual temperature. But our soil is subject to extreme wet in spring and dryness in summer, to severe cold and intense heat. A farm whose bottom lands are reinvigorated by yearly inundations, may thrive under an exacting husbandry that would exhaust an upland farm in a few years. Modes of agriculture must be suited to circumstances. Nevertheless, the experiments and discoveries and practices of every land are worth our careful attention.

"We do not advocate large outlays for expensive machines—for fancy cattle, for every new thing that turns up. But when, after full trial, it is ascertained what are the best farm horses, the best breed of cattle, the best milch cows, the most profitable breed of hogs and sheep, and the most skillful routine of cultivation, we think our farmers ought to profit by the knowledge. It is never a good economy to have poor things when you can just as well have the best. This, then, is

OUR CREED.

"We believe in small farms and thorough cultivation.

"We believe that soil loves to eat, as well as its owner, and ought, therefore, to be manured.

"We believe in large crops which leave the land better than they found it—making both the farmer and the farm rich at once.

"We believe in going to the bottom of things and, therefore, in deep plowing, and enough of it. All the better if with a subsoil plow.

"We believe that every farmer should own a good farm.

"We believe that the best fertilizer of any soil, is a spirit of industry, enterprise, and intelligence—without this, lime and gypsum, bones and green manure, marl and guano will be of little use.

"We believe in good fences, good barns, good farm-houses, good stock, good orchards,—and children enough to gather the fruit!

"We believe in a clean kitchen, a neat wife in it, a piano, a clean cupboard, a clean dairy, and a clean conscience.

"We firmly disbelieve in farmers that will not improve; in farms that grow poorer every year; in starving cattle; in farmers' boys turning into clerks and merchants; in farmers' daughters unwilling to work, and in all farmers ashamed of their vocation, or who drink whisky till honest people are ashamed of them."

After a period of 85 years of unprecedented progress intervening, there is only one word in this article that need be changed to bring it down to date, i. e., change to read sewing-machine, instead of "spinning wheel."

**A FIELD OF ONIONS**

Notice in this picture the method of planting two rows on a ridge. It is now generally practiced by the large gardeners, and should be applied in the home garden. The drainage this method affords produces cleaner, better and earlier vegetables.

The following is a list of vegetables that should be planted the way we have illustrated in the picture:

Beets	Kohl Rabi	Parsley	Salsify
Chard	Lettuce	Parsnip	Spinach

Vegetable Garden Calendar for Out-Door Planting 300 Questions Answered On This Page

Owing to the diversity of the soil and climatic conditions of the great Southwest, it is impractical to follow without some deviation any table that might be formulated. We believe this table is as nearly correct as any table can be made, yet the time of planting must vary with each season, and so seldom are the seasons at all similar that there is always an element of risk for the man who plants early. Each month, too, requires certain varieties best suited to the season and purpose for which it is planted.

KIND	SEED FOR 1 ACRE	SEEDS FOR 100 FEET OF ROW	DISTANCE APART		DEPTH OF PLANTING (*2)	TIME OF PLANTING (*3)	READY FOR USE AFTER PLANTING (*4)
			ROWS APART (*1)	APART IN ROW (*1)			
*Artichoke	1 lb.	1 oz.	4 ft.	3 ft.	1 in.	April to July	8 mos.
*Asparagus Seed	3 lbs.	1 oz.	1 to 2 ft.	3 to 5 in.	1 in.	Feb. to May	2 years
*Asparagus Plants	14,000	60 to 80	2 to 3 ft.	15 to 20 in.	6 to 10 in.	Dec. to Mar.	1 year.
*Beans, Bush	25 to 50 lbs.	1 lb.	1-2 to 2 ft.	4 in.	1 to 2 in.	Mar. to Sept.	2 to 3 mos.
*Beans, Pole	25 to 40 lbs.	1-2 lb.	3 to 4 ft.	3 ft.	1 to 1-2 in.	Mar. to July	2 to 3 mos.
*Beets, Table	8 lbs.	2 oz.	1 to 1-2 ft.	3 to 4 in.	1-2 to 2 in.	All the year	3 to 4 mos.
*Brussels Sprouts	1-2 lb.	1-4 oz.	1-2 to 2 ft.	1-2 to 2 ft.	1-2 in.	All the year	4 to 5 mos.
*Cabbage	1-2 lb.	1-4 oz.	3 ft.	1 to 2 ft.	1-2 in.	All the year	5 to 6 mos.
*Carrot	4 lbs.	1-4 oz.	1 to 2 ft.	3 to 4 in.	1-2 in.	All the year	3 to 4 mos.
*Canoli-lower	1-2 lb.	1 oz.	2-12 to 3 ft.	1-2 to 2 ft.	1-2 in.	July to Jan.	4 to 5 mos.
*Celery	1-4 lb.	1-4 oz.	1-2 to 3 ft.	6 in.	1-8 in.	Jan. to May	4 to 5 mos.
*Corn, Sweet	10 lbs.	1-4 lb.	3 to 4 ft.	12 in.	1 in.	Mar. to Aug.	1 to 3 mos.
*Cucumbers	3 lbs.	1-2 oz.	4 ft.	1 in.	1 in.	Mar. to Sept.	2 to 3 mos.
*Egg Plant	1-4 lb.	1-3 oz.	3 to 2-12 ft.	1-12 to 2 ft.	1-2 to 1 in.	Dec. to July	3 to 4 mos.
*Kale, or Borcole	1-2 lb.	1 oz.	1-2 to 2 ft.	1 to 2 ft.	1-2 in.	All the year	3 to 4 mos.
*Kohi-Rabi	3 lbs.	1-4 oz.	1-2 to 2 ft.	4 in.	1-2 in.	All the year	3 to 4 mos.
*Lettuce	3 lbs.	1-2 oz.	1-2 to 2 ft.	6 to 8 in.	1-2 in.	All the year	3 to 4 mos.
*Melon, Musk	1 lb.	1-2 oz.	4 to 6 ft.	6 to 8 ft.	1 in.	Mar. to July	3 to 4 mos.
*Melon, Water	1 lb.	1 oz.	6 to 8 ft.	8 to 10 ft.	1 in.	Mar. to June	3 to 4 mos.
*Okra	6 lbs.	1 oz.	2 ft.	1 ft.	1 in.	April to July	4 mos.
*Onion Seed	3 lbs.	1 oz.	1 to 1-2 ft.	2-12 to 3 in.	1-2 to 1 in.	Aug. to April	5 to 6 mos.
*Onion Sets	250 lbs.	2 lbs. sets	1 to 1-2 ft.	2 to 2-12 in.	1 in.	All the year	4 to 5 mos.
*Parsley	2 lbs.	1-4 oz.	1 to 1-2 ft.	3 to 4 in.	1-8 in.	All the year	5 to 6 mos.
*Parsnip	4 lbs.	1-2 oz.	1-2 to 2 ft.	3 to 4 in.	1-2 to 1 in.	All the year	4 to 5 mos.
*Peas	60 lbs.	1-2 lb.	2-12 to 3 ft.	2 in.	2 to 3 in.	All the year	4 to 5 mos.
*Pepper	1-2 lb.	1-8 oz.	1-2 to 2 ft.	15 to 18 in.	1-2 in.	Dec. to July	3 to 4 mos.
*Potatoes, Irish	600 lbs.	5 lbs.	2 to 3 ft.	12 to 15 lbs.	4 to 6 in.	Jan. to Sept.	2 to 3 mos.
*Potatoes, Sweet	400	3 lbs.	3 to 5 ft.	14 in.	3 in.	Mar. to July	3 to 4 mos.
*Pumpkin	1 lb.	1-2 oz.	6 to 8 ft.	6 to 8 ft.	1 to 1-2 in.	Mar. to Aug.	3 to 4 mos.
*Radish	12 lbs.	1 oz.	1 to 1-2 ft.	1-2 to 2 ft.	1-2 in.	All the year	1 to 2 mos.
*Rhubarb Plants	6 lbs.	33 plants	3 to 5 ft.	1500 to 2000 lbs.	2 to 3 in.	Dec. to May	2 to 3 mos.
*Salsify	6 lbs.	1 oz.	1-2 to 2 ft.	3 to 4 in.	1 to 2 in.	All the year	3 to 4 mos.
*Spinach	15 lbs.	1 oz.	1-2 to 2 ft.	2 to 4 in.	1 in.	All the year	3 to 4 mos.
*Squash, Summer	2 lbs.	1-4 oz.	3 to 4 ft.	3 to 4 ft.	1-2 in.	Feb. to Sept.	2 to 3 mos.
*Squash, Winter	1 lb.	1-4 oz.	7 ft.	7 to 9 ft.	1-2 in.	Mar. to Aug.	3 to 4 mos.
*Tomato	1-8 lb.	1-8 oz.	7 ft.	6 ft.	1-2 in.	Dec. to July	3 to 4 mos.
*Turnip	3 lbs.	1-2 oz.	1 to 2 ft.	3 to 4 in.	1-4 to 1-2 in.	All the year	3 to 4 mos.

(1)—Distance apart varies with the season and soil.

(2)—Depth of planting varies with the season and condition of soil.

(3)—Time of planting varies according to local conditions with regard to temperature.

(4)—Time of maturity varies with the temperature and cultural conditions. This table shows required time of maturity after transplanting. It requires 6 to 8 weeks longer from time of sowing seed.

†—Drill and tbin.

*—Transplant.

†—Plant in hills.

SEEDS REQUIRED PER ACRE FOR FIELD CROPS IN SOUTHERN CALIFORNIA

VARIETY	PLANTS OR SEED	HOW TO PLANT	AVERAGE APPROXIMATE YIELD
Alfalfa	25 lbs. seed	Drill or broadcast	8 to 10 tons hay, or 600 lbs. seed
Alfalfa	8 lbs. seed	Drill or broadcast	3 tons hay and pasture
Barley	40 lbs. seed	Drill or broadcast	2 to 4 tons hay
Beans, Bush	25 to 40 lbs.	Drill in rows 3 ft. apart	1500 to 2000 lbs.
Beans, Lima	50 to 60 lbs.	Drill in rows 3 ft. apart	1500 to 2000 lbs.
Beans, Windsor	100 lbs.	Drill in rows 2 ft. apart	Hog pasture and green manuring
Beets, Stock	8 "	Drill in rows 2 ft. apart	20 to 25 tons of beets
Buckwheat	45 "	Drill or broadcast	Green manuring
Burr Clover	20 "	Drill or broadcast	Pasture and green manuring
Canary	50 "	Drill or broadcast	1-2 tons seed
Cane, or Sorghum	5 "	Drill, 5 or broadcast 40 lbs.	20 tons green fodder
Carrots, Stock	4 "	Drill in rows 1-2 ft. apart	20 to 25 tons of carrots
Corn, Broom	5 "	Drill in rows 3 ft. apart	1-2 ton broom straw
Corn, Egyptian	5 "	Drill in rows 3 ft. apart	1-4 tons grain
Corn, Ensilage	40 "	Drill 1 ft. apart in rows 3 ft. apart	30 to 50 tons
Corn, Field	5 "	Drill 3 ft. apart, rows 3 ft. apart	2 tons grain
Corn, Kafir	5 "	Drill in rows 3 ft. apart	1-4 tons
Corn, Milo Malze	5 "	Drill in rows 3 ft. apart	1-2 tons grain
Corn, Pop	6 "	Hills 1 ft. apart, rows 2 ft. apart	1 ton
Cotton	15 "	Drill in rows 4 ft. apart	1 to 1-2 bales and seed
Cow Peas	25 "	Drill in rows 3 ft. apart	Pasture and green manuring
Potteria	10 "	Drill in rows 3 ft. apart	2 tons grain
Flax	60 "	Drill or broadcast	1-4 tons grain
Foenugreek	35 "	Drill or broadcast	1 ton grain or green manuring
Grass, Bermuda	8 "	Broadcast	Pasture (damp land)
Grass, Italian Rye	20 "	Broadcast	Hay and pasture (damp land)
Grass, Paspalum	10 "	Broadcast	Cut 1-2 tons per acre 4 times (damp land)
Grass, Perennial Rye	20 "	Broadcast	Hay and pasture
Grass, Rhodes	10 "	Broadcast	Cut 2 tons per acre 3 times
Grass, Sudan	10 "	Broadcast	Cut 4 tons per acre 3 times
Oats	50 "	Drill or broadcast	3 tons hay or 1 ton grain
Rye	40 "	Drill or broadcast	Pasture or green manuring, or 1 ton grain
Vetch	40 "	Drill or broadcast	Pasture or green manuring
Wheat	40 "	Drill or broadcast	2 tons hay or 1 ton grain

SEEDS AND PLANTS PER ACRE FOR VEGETABLES

VARIETY	SEED	PLANTS	YIELD
Asparagus	3 lbs.	10,000	Indefinite
Beans, String	50 "	Drill	Indefinite
Beets, Table	8 "	Drill	10 tons
Cabbage	1-2 "	Drill	10,000
Carrot	1-2 "	Drill	500 sacks
Ca.iflower	1-2 "	Drill	8,000 heads
Celery	1-4 "	Drill	20,000
Corn, Sweet	10 to 20 lbs.	Hills	15,000 doz.
Cucumber	3 lbs.	Hills	400 boxes
Egg Plant	1-4 "	Drill	Indefinite
Lettuce	3 "	Drill	Indefinite
Melons, Casaba	1 "	Drill	500 crates
Melons, Musk	1 "	Drill	Indefinite
Melons, Water	1 "	Drill	Indefinite
Onion	3 "	Drill	Indefinite
Peas	60 "	Drill	10 to 15 tons
Peppers	1-2 "	Drill	Indefinite
Potato, Irish	600 "	Drill	Indefinite
Potato, Sweet	400 "	Drill	60 to 120 sacks
Pumpkin	1 "	Drill	100 to 200 sacks
Rhubarb	2 "	Drill	15 to 20 tons
Sinach	15 "	Drill	Indefinite
Squash, Hubbard	1 "	Drill	10 tons
Tomato	1-8 lb.	Drill	680 hills
Turnips	3 "	Drill	1000 plants
			10 to 20 tons
			500 sacks

NUMBER OF PLANTS TO ACRE SET AT REGULAR DISTANCES APART

DISTANCE APART	NO. PLANTS
3 in. by 4 in.	522,720
4 in. by 4 in.	392,040
6 in. by 6 in.	174,240
1 ft. by 1 ft.	43,560
1-12 ft. by 1-12 ft.	19,360
2 ft. by 1 ft.	21,780
2 ft. by 2 ft.	10,890
2-12 ft. by 2-12 ft.	6,960
3 ft. by 1 ft.	14,520
3 ft. by 2 ft.	7,260
3 ft. by 3 ft.	4,840
3-12 ft. by 3-12 ft.	3,555
4 ft. by 1 ft.	10,890
4 ft. by 2 ft.	5,445
4 ft. by 3 ft.	3,630
4 ft. by 4 ft.	2,722
4-12 ft. by 4-12 ft.	2,150
5 ft. by 1 ft.	8,712
5 ft. by 2 ft.	4,356
5 ft. by 3 ft.	3,904
5 ft. by 4 ft.	2,178
5 ft. by 5 ft.	1,742
5-12 ft. by 5-12 ft.	1,440
6 ft. by 6 ft.	1,200
7 ft. by 7 ft.	888
8 ft. by 8 ft.	680
9 ft. by 9 ft.	537
10 ft. by 10 ft.	435
11 ft. by 11 ft.	360
12 ft. by 12 ft.	302
14 ft. by 14 ft.	222
15 ft. by 15 ft.	193
16 ft. by 16 ft.	170
16-12 ft. by 16-12 ft.	160
17 ft. by 17 ft.	150
18 ft. by 18 ft.	134
19 ft. by 19 ft.	120
20 ft. by 20 ft.	108
25 ft. by 25 ft.	72
30 ft. by 30 ft.	48
33 ft. by 33 ft.	40
40 ft. by 40 ft.	27
50 ft. by 50 ft.	17
60 ft. by 60 ft.	12
66 ft. by 66 ft.	10

Rule.—Multiply the distance in feet between the rows by the distance the plants are apart in the rows, and product will be the number of square feet for each plant or hill; which divided into the number of square feet (43,560), will give the number of plants to the acre.

A & M SEEDS

**Aggeler & Musser
Seed Co.'s**
Vegetable Seeds are the Stand-
ard Seeds of the Southwest.

A & M SEEDS

The vegetables grown from A & M seeds are the standard vegetables at every market in which they appear. The following pages offer only the varieties that have been tried and proven to be adapted to certain conditions, and each variety is adequately described, that the purchaser need make no mistake in selecting the seeds best suited to the season and to his local conditions. Read the descriptions carefully; if yet in doubt, write us.
SEEDS PLANTED OUT OF SEASON, OR IN UNCONGENIAL SOIL MEANS LOSS TO THE GROWER.

VEGETABLE PLANTS AND ROOTS—MILLIONS OF THEM

No Tender Plants Sent by Mail Except at the Buyer's Risk

We aim to have on hand throughout the year vegetable plants of every kind in their proper season. All hot house plants are thoroughly hardened by exposure in the open before sending out. Cash must accompany all orders for plants.

	On Hand	Doz.	Price—Postpaid	f. o. b. here	Weight
		Per 100	Per 1000	Per 1000	Per 1000
Artichoke, Green Globe.....	Jan. 1st to May 1st	\$1.50	\$10.00	\$.....	50 lbs.
Asparagus, Argenteuil, Palmetto.....	Jan. 1st to May 1st	.35	2.00	12.00	50 "
*Cabbage, Winningstadt, Danish Ballhead, All Year.....		.20	.75	4.00	50 "
*Cauliflower, Snowball, Early eParl.....	Sept. 1st to Apr. 1st	.20	1.00	4.00	50 "
*Celery, Dwarf Self-Blanching.....	Apr. 1st to Sept. 1st	.25	1.25	6.00	50 "
Chives.....					
Egg Plant, New York Spineless.....	Apr. 1st to Sept. 1st	.75	1 bunch 10c; 3 bunches 25c.	30.00	100 "
Horse Radish, Bohemian.....	Jan. to May 1st	.25	1.50	10.00	25 "
*Pepper, Anaheim Chili.....	Mar. 15th to Sept. 1st	.30	2.00	15.00	20 "
Chinese Giant.....	Mar. 15th to Sept. 1st	.30	2.00	15.00	20 "
Plumierio.....	Mar. 15th to June 1st	.30	2.00	15.00	20 "
Rhubarb.....	Jan. to May 1st	1.50	10.00	.....	.....
*Sweet Potato, Yellow Jersey.....	Mar. 15th to July 1st	.20	1.25	5.00	20 "
Porto Rico and Georgia Yam.....	Apr. 1st to June 1st	.25	1.50	6.00	20 "
*Tomato, A. & M. First Early.....	Feb. 15th to June 1st	.25	1.50	10.00	20 "
Home.....	Feb. 15th to June 1st	.25	1.50	10.00	20 "
Beefsteak.....	Feb. 15th to June 1st	.25	1.50	10.00	20 "
Stone.....	Apr. 1st to Sept. 1st	.25	1.50	10.00	20 "

*After May 1st tomato plants grown outside, \$3.50 per 1000.

Write for quantity price.

Plants by Mail or Express

Owing to what appeared to be an unavoidable loss in connection with the shipping of plants, we stated in last year's catalog that we would send no plants by mail or express.

This, like all other prohibitory laws only acted as an incentive to violate it, with the result that we shipped more plants than ever before. We feel that we can not ignore the demand from our customers for the accommodation they are entitled to. Therefore we have put a specialist on the job who will give your orders prompt attention. This man together with the horticultural inspector will see to it that you will get good plants.

These we offer at the above prices f. o. b. here. No charge for packing.



Tomato Plants

NOTICE TO CANNERS AND LARGE PLANTERS

Last year we shipped two million tomato plants to canners and large planters operating from Stockton to San Diego and all intermediate points without disappointing a single customer.

Our system worked with 100% efficiency.

By this system the canner can contract with his growers, both parties knowing they will have the right plants at the right time and plenty of them, saving them much anxiety, discomfort, labor and expense.

A SUGGESTION

Each season some one in every community has neglected to grow plants for their garden, often with the idea that they will need only half a dozen each of several kinds and they can be bought cheaper than they can be grown; all of which is very true. Therefore let us suggest that when you are reading this catalog preparatory to making up your order for seeds take into consideration that many of your neighbors will want some plants. So, if you hesitate to order a packet of this or that because three or four plants are all you need, just consider that your neighbor will want some; it will not be much trouble to grow them along with other things, and you or your boy may make a little money with which to buy War Saving Stamps, and at the same time increase food production.

Every packet contains enough seed to grow more vegetables of its kind than the average family can consume in a season.

When you have more than you want, sell or give to your

A & M Artichoke

REMARKS: The early artichoke brings a high price; but Southern California climate does not produce them early enough to get this high price therefore we do not advise planting more than 1/4 acre for local market.

The French Artichoke is being canned quite extensively and we would suggest, if you live near a cannery, seek to make a contract to grow the artichoke in sufficient quantity.

The seed may be sown at any time and transplanted when about eight inches high. It will mature in about eight months from time of planting the seed, but in Southern California the proper season to bloom is in April.

The best way to get a good artichoke is to secure plants from old stalks of some good strain, as seeds cannot be depended upon to produce any certain variety. One half dozen is enough for a family garden.

Transplant five feet apart in rows seven feet apart. When the young plants are attacked by aphid spray with "Black Leaf 40". About the time the buds are well advanced the under leaves often become a harbor for flies and aphid and ants. When this occurs break off all the under leaves, clear the ground of all rubbish and spray with "Black Leaf 40" and set ant poison. See Insecticide page —. You will then have a long season of large, clean buds.



Six Artichoke Plants in a Family Garden

Selected Large Green Globe

(Pkt. 10c) (oz. \$1.20) (1/4 lb. \$4.00) (lb. \$12.00). Plants from good stalks, 10c each; 6 plants 75c; 12 plants \$1.25 postpaid.

When you contemplate buying plants make use of our call counter (see page 3.) Order by letter or phone and

Jerusalem Artichoke

REMARKS: There is only a limited market for the Jerusalem Artichoke because it is little used for human food, and because of its perishable nature it is advisable that you grow only for your own use.

A border of artichoke serves as an effective windbreak.



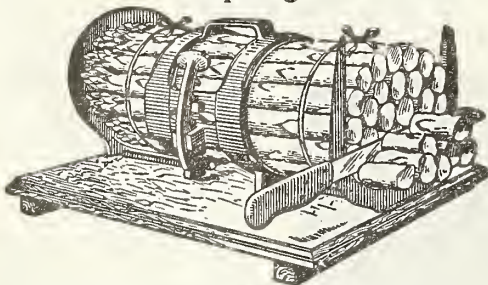
Jerusalem Artichoke

It is a most valuable food for hogs. It is said by many hog raisers that a hog fed on artichokes has never been known to have cholera. They grow to perfection here, yielding as much as 500 sacks per acre. They are grown from tubers the same as Irish potatoes. It requires 300 lbs. to plant an acre. Cut the tubers to single eyes. Plant during March and April two feet apart in rows three feet apart. Let them grow until fall and allow the hogs to harvest the crop.

The tubers are excellent for table use boiled as potatoes or parboiled and pickled in vinegar.

(Per lb. 25c) postpaid; (10 lbs. \$1.00) (100 lbs. \$5.00) f. o. b. here.

Asparagus Buncher



Philadelphia Asparagus Buncher

Whether your patch is small or large, it will pay you to get an Asparagus Buncher, either one or two pound. All professional shippers put it up that way because it saves the retailer the trouble of weighing and the constant loss of over-weight to each pound, besides, this work may be done at home and not at the busy market.

We carry the Philadelphia make, which is the popular one with all large shippers. No. 1 size will shape bunches 3-3½ inches in diameter, weighing about one pound. No. 2 will shape bunches 4-5 inches in diameter, weighing about two pounds. Price—(No. 1, \$2.75) (No. 2, \$3.00) f. o. b. here.



No. 1 Field of Asparagus. Older Than 25 Years

A & M Asparagus

Write U. S. Dept. of Agriculture for Farmers' Bulletin No. 829, "Asparagus."

REMARKS: No vegetable is more healthful or more palatable than the tender asparagus that appears on the table very early in spring.

Every home garden should have a bed about ten by twenty feet, planting about one hundred roots. This would furnish enough tips from day to day to supply the family table.

Set the rows two feet apart instead of four as for field culture.

Culture for Field Planting

Drill the seed thinly in rows ten inches apart in your seed bed during March and April.

Transplant about January 1st, setting the roots twelve inches apart in furrows 4 to 6 feet apart and twelve inches deep.

Cover with two or three inches of soil, and on top of that three or four inches of well rotted manure thoroughly mixed with soil. This is sufficient for the first season and will produce a marketable crop the following April, possibly March. Continue cutting until the sprouts become too small for the kitchen. Then allow them to grow to full size and spray the whole thoroughly with powdered sulphur during August, using only the best grade. This is to prevent or destroy any mildew, red spider or rust. In November cut the stalks close to the ground and burn them. Fertilize the rows with cheap coarse salt (one ton per acre). Cover the rows in hills like the picture. With proper hoeing and culture the asparagus rows will bear profitably for many years. One pound of seed will grow plants sufficient for one acre.

Market: A large acreage is grown for canneries, and in sections where it can be produced very early it is grown for Eastern markets. It is also very profitable to grow for local market.

Palmetto The popular variety for the home garden or market. The sprouts are green and their delicious flavor makes this variety the favorite for table use. (Pkt. 5c) (oz. 10c) (¼ lb. 30c) (lb. 90c postpaid.)

Asparagus Roots We have all ways on hand roots of the Palmetto and Argenteuil varieties. Two year old roots—(per doz. 25c) (100 roots \$1.50.)

Argenteuil An excellent variety for the canner and early shipper. This variety is now more extensively grown by large planters and shippers because it is more prolific and stands shipping better. Also its purple tinge is attractive, and its excellent flavor puts it on an equal with the Palmetto for table use.

(Pkt. 5c) (oz. 10c) (¼ lb. 35c) (lb. \$1.00 postpaid.)

Plant Asparagus Roots one foot apart in trenches four feet apart.

The New Rust-Resistant Asparagus "WASHINGTON"

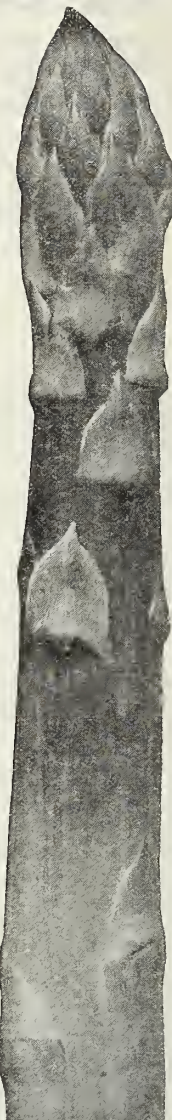
This new pedigreed rust resistant variety was bred up by the United States Bureau of Plant Industry co-operating with the Massachusetts Agricultural Experimental Station covering a period of fourteen years. The name Washington was applied because the original or first acceptable rust proof male plant was given that name and all subsequent prodigies are identified by that name. There are now two other strains known as Martha Washington and Mary Washington. The one we offer is the "Washington." (Pkt. 10c) (oz. \$1.00) (¼ lb. \$3.35) (1 lb. \$10.00).

We have one year old roots which we offer at (1 doz. 50c) (100 \$3.00) (1000 \$20.00).

Complying with recommendations of the United States Department of Agriculture, our roots are selected and are not cut back.

PLANT A HOME GARDEN NOW

Vegetables from the home garden are always the best. No market vegetables ever have the sweetness or flavor of those just gathered from your own back yard garden. You don't need to plant lots of seed; from a few feet of ground a supply of vegetables for a family can be grown. A back yard containing a small, well-cultivated vegetable garden is an ornament to a neighborhood. Be sure to plant a vegetable garden this spring.



Argenteuil Asparagus

A & M Beans

All orders for large quantities that would be cheaper to send by express or freight, we deliver to the transportation company at Los Angeles. We do not prepay transportation unless sufficient money has been sent for that purpose.

Market gardeners who are beginners and not familiar with gardening in the Southwest would do well to consult us either in person or by mail before buying, as to variety and time of planting. Special attention should be given to the instructions concerning the time of planting, which is an important factor in Southern California, as each month requires a different variety according to the market for which they are grown.

Bean Culture for Home Gardens

During the early spring give sandy soil preference, but heavy soil in summer. When the ground is properly moistened and pulverized, plant bush beans one or two seeds every four inches, in rows twenty to twenty-four inches apart. If the soil is heavy, cold and wet, one-half inch is deep enough. Plant deeper in sandy soil. During the cool spring months plant shallow; during the hot summer months plant down to moist earth, if it should require five inches. Do not plant in muddy soil, nor irrigate immediately after planting, else the seed will rot. During the winter months do all irrigating in the morning, because the water from the pipe is warm and will help the growth. When applied in the evening the water chills the plants, cools the soil, retards the growth and causes mildew. During hot summer days irrigate or sprinkle in the late afternoon.

Mulch the soil as soon as it gets dry enough after each irrigation. All beans should be sprayed with powdered sulphur of the best grade twice during their season—once before the blossom appears and again just before the green bean is ready to pick. Apply the powdered sulphur in the morning of a bright sunny day before the wind rises, and before the dew has dried. It is not necessary to cover the foliage with sulphur thick enough to injure it, but if sulphur is scattered along the row so that the dust will pass lightly over the field, the fumes created by the heat of the sun will prevent mildew. Sulphur will not cure, but will arrest and prevent mildew.

Market gardeners should read carefully the description of each variety.

Anyone having light, sandy soil that needs enriching, should plant it to beans, inoculating the seed with nitrogen culture.

The hand-picking of seed beans is a task of large proportion and it may surprise you to know that we have employed almost throughout the entire year, six or more persons constantly hand-picking beans and peas.

Bush Beans---Round Green Pod Varieties

The following list comprises all the varieties best suited to general gardening. We have ceased to catalog others that would only mislead the gardener.

Write for quantity prices on all beans.

Early Refugee or 1000 to 1 An all around favorite for the summer months. Round pod, medium size, tender, desirable for table and cannery. It is a favorite with the market gardener because it is a good shipper, a good seller, and very prolific. Plant from April to August. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here).

Stringless Refugee This variety is a decided improvement over the old refugee in that it is entirely stringless, somewhat larger pods and more prolific, which is claiming a great deal, for the Refugee bean has long been considered one of the most prolific of all string beans. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here).

Stringless Green Pod One of the best varieties for the first early spring planting. It is very prolific and tender, a great favorite with market gardeners for a quick maturing crop. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here).

FLAT GREEN POD VARIETIES

Canadian Wonder Flat pod of good flavor, not stringless, but otherwise tender. Very hardy. Desired above all others by gardeners growing on the foothills for winter shipping, because of its luxuriant growth and continuous bearing of long, straight pods. Plant in September, October, November, December and January, according to your locality. (Per pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$3.00) f. o. b. here.

Six Weeks A strong, rapid grower, which matures quickly. Flat pod. Only desirable for forcing. Plant in February and March, also early in September and October. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75) f. o. b. here.

Dwarf Horticultural Desirable both for green and dried beans. Stringless and of excellent flavor. It is of Italian origin and is very popular with the Italian population. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75) f. o. b. here.

ROUND YELLOW POD VARIETIES

Stringless or Refugee Wax This is a favorite because of its hardy growth and enormous yield of tender, round stringless pods of excellent flavor. Plant from April until September. (Per pkt. 10c) (½ lb. 30c) (lb. 50c prepaid) (10 lbs. \$3.50) f. o. b. here.

Prolific Black Wax Pod round straight, five to six inches long. Decidedly the most desirable for mid-summer gardening. Plant from April to August. (Pkt. 10c) (½ lb. 30c) (lb. 50c prepaid) (10 lbs. \$3.50) f. o. b. here.

FLAT YELLOW POD VARIETIES

Our Golden Wax Long, flat pod, rich golden yellow, stringless. This variety is so superior to other strains of Golden Wax that we have discarded all but this. Plant early in April to August. (Pkt. 10c) (½ lb. 30c) (lb. 50c prepaid) (10 lbs. \$3.50) f. o. b. here.

GROWING GREEN OR WAX BEANS FOR THE CANNERY

It is a good side-crop to grow in a young orchard to make quick returns because your crop is off and the ground available for another crop within ten weeks.

If your crop is too small for the cannery, and too large to sell by the wayside, buy a field canning outfit and put up all your surplus fruits and vegetables.

Flat Yellow Pod Varieties

Ventura Wonder Wax Nearly all agree that this is a wonder indeed. Long flat pod, very prolific; bears early, and continues nearly all summer; planted in September, if not too cold, bears until January, being rust proof. This bean was introduced by us in 1900, and has been the market gardener's favorite since that time. Plant from February to October. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here). Write for quantity price, as prices fluctuate.

Rust Proof

Mr. A. C. Yingling says, "In my field of Ventura Wonder, were some Navys mixed here and there. The Navys were destroyed with rust but the Venturas were unaffected."

Davis Kidney Wax Good bearer; pods are long, rustless and hardy; very tender when young. (Pkt. 10c) (½ lb. 25c) (lb. 40c) postpaid; (10 lbs. \$2.75) f. o. b. here.

"Phoenix, Arizona, June 28, 1917.

Aggeler & Musser Seed Co.

Dear Sirs:—The Davis Kidney Wax Beans that I got from you in the spring are promising so well that I wish to try them as a fall crop. They are in bloom and the pods are setting nicely on the vines and the thermometer ranging from 100 to 110 degrees in the shade. Other varieties that are planted alongside are blighted and the blooms are falling off with the heat. (Signed) Luther Look."

Baldwin Wonder Wax A very prolific wax-podded variety which we recommend for the home garden and especially for home canning because of the beautiful waxy pods. The round fleshy pods are entirely stringless, very brittle and of exceptionally good quality. Do not fail to include this variety in your home or school garden order. (Pkt. 10c) (½ lb. 30c) (lb. 50c) postpaid; (10 lbs. \$3.50).

THE WHITE WONDER, SEE PAGE 17



Pole Beans

A Word About Pole Beans

Many growers hesitate to plant pole beans because of the scarcity of poles. This objection is easily overcome, and the greater profit in growing the pole varieties should be sufficient reason for going to a little extra care. Let the family gardener plant Oregon Evergreen corn early in March, and when the corn is one foot high, plant to every other hill some Kentucky Wonder, or Kentucky Wonder Wax. Thus you will have a crop of early sweet corn and an enormous crop of beans.

White Seeded Kentucky Wonder This variety of the many pole beans may truly be termed the All round Money-Maker. It is as hardy and rust resistant as the Canadian Wonder. In the South where earliness and lateness mean so much to the market gardener, the White Seeded Kentucky Wonder is far ahead of other varieties. It is enormously prolific of firm pods that withstand shipping to almost any part of the United States. It matures ten days earlier than the Brown Seeded Kentucky Wonder.

The seed is pure white, and on that account is a profitable commercial bean, for the gardener, the shipper and canner. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here).

MRS. NEILSON, Burbank

I purchased of you fifteen cents worth of Kentucky Wonder Beans and planted 4 rows 60 feet long. I gathered 380 pounds of green beans. They were trellised with 4 ft. lath.

Celestial or Yard Long

A good table bean as well as a curiosity. It is very prolific and a rank grower. Should have ample arbor to climb upon. It should be grown more extensively in the home garden. It is of Chinese origin and one of the best vegetables emanating from that source. It is also absolutely rust-proof. (Pkt. 15c) (1 oz. 30c postpaid).

Superior Kentucky Wonder

We have been growing this bean on our trial grounds for two years, and are now convinced it is superior to any of the other Kentucky Wonder types offered by us.

The illustration on this page is from a photograph of a single matured vine showing its immense prolificness. The large size pods fill perfectly and in the "snap" stage are deep green color, meaty, stringless and of delicious flavor. Vines continue to bear immense quantities throughout the season if kept picked closely. When allowed to ripen the shell beans of pure white color are most excellent for winter use. It is a pole snap bean that no home garden should be without. It's the one pole bean for any garden and you will never regret planting it. It will prove a prize winner in any contest.

(Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here).

MR. POSTELL, California

I got some "Superior Kentucky Beans," will say in advance that no bean can compare with them. I planted the beans and after using all the green beans we could I got 4 lbs. dry beans from 3 hills. In July I planted the seed I had grown and just 6 weeks to the day the dead vines were pulled out. I will leave this open for some contest. I got 2 crops from the Monstrous Lima bean and nearly all perfect seeds average 1½ inches long but the foliage got so dense I cut them out.

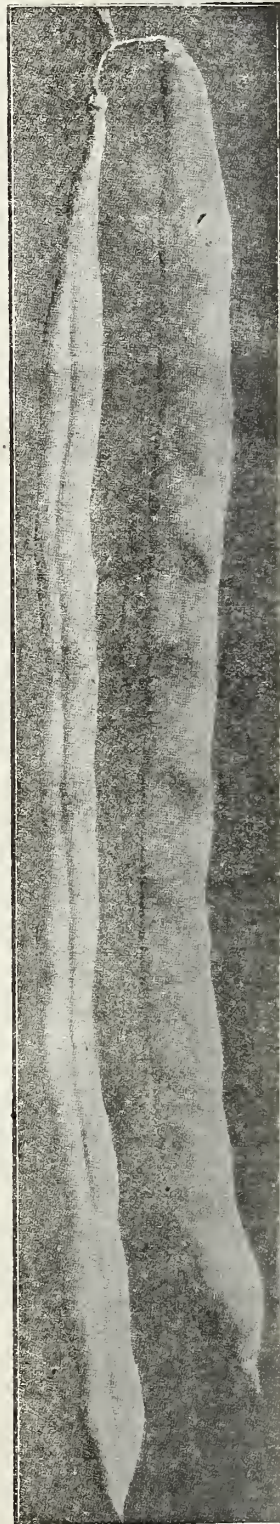
Kentucky Wonder Long, round pod. This is the most popular bean in Southern California, because here it grows to perfection; is more prolific than any other variety, which, together with its other good qualities, makes it the gardener's delight. Plant from April to July. Do not plant later than August, as it is very prone to rust during the month of September. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here).

Kentucky Wonder Wax The Pride of the Garden. Its popularity as a home garden bean soon reached nationwide proportions, and today is offered by nearly every seedsmen in the United States. It commences to bear when scarcely higher than the average bush variety, and keeps on producing until killed by frost. It is a rampant grower, one plant filling a pole with a mass of vines densely loaded with luscious beans. They are firm, entirely stringless, and when cooked, deliciously rich and buttery. The seed is brown, closely resembling that of the Kentucky Wonder. Plant from April to August. (Pkt. 10c) (½ lb. 30c) (lb. 50c prepaid) (10 lbs. \$3.50 f. o. b. here).

Italy's Favorite An all around good bean for the family garden. A stringless green pod of excellent flavor; a good green shelled bean; good for succotash, for canning and none better for cooking. It is an all around good commercial bean. (Pkt. 10c) (½ lb. 25c) (lb. 40c) (10 lbs. \$2.75) f. o. b. here.



Superior Kentucky Wonder



White Seeded Kentucky Wonder

POLE BEANS—(Continued)

Horticultural Pole Also referred to as Romaine, Cranberry, Italian and Cornfield. Its large succulent tender pods make it a desirable bean for the table. It is also one of the most desirable green shelled beans for succotash and excellent as a dry bean. (Pkt. 10c (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here).

White Creaseback This variety is especially valuable for its extreme earliness, and its habit of perfecting all its pods at the same time. Vines small but vigorous, and, in good soil, wonderfully productive, bearing pods in clusters from four to twelve. Pods medium length, silvery green, of the best quality as snaps and stand shipping better than most sorts. The seed is small, oval, very white and hard. It is an excellent bean to cook dry or to sell on the open market as the small white bean. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here).

Lazy Wife One of the best pole beans for snaps. The large, fleshy pods are five to six inches long and entirely stringless when young, have a rich buttery flavor. When nearly matured they are delicious when shelled and cooked while yet green. The dry beans, too, are unsurpassed by any. The seed is white, nearly round, and somewhat larger than a pea. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here).



The Scarlet Runner as an Arbor Bean

The Scarlet Runner An old-time favorite that heretofore has been planted chiefly for ornamental purposes. But few people know that the Scarlet Runner may be planted May 1st and in six weeks attain a height of eight feet, and rapidly cover an arbor with vines twenty feet long.

The Scarlet Runner planted May 1st will bear edible pods from July 1st until late fall. When the vines mildew trim them back to within a foot of the ground. The roots will survive the winter, and by the following May will have the arbor again covered and bear green beans until August when the vines again mildew. Cut back as before and with proper irrigation they will bear another crop in October, and so on two crops a year indefinitely.

Be sure to build a permanent arbor, and plant some Scarlet Runner during April. (Pkt. 10c) (½ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75 f. o. b. here).



A good way to train all Pole Beans

The Monstrous Lima

A Great Money-Maker

Two crops a year for many years. Originated in Orange County, Cal. Introduced by us in 1907. This picture shows actual growth of the bean.

In addition to this we have numerous testimonials to the effect that we have not exaggerated when we claim this to be the largest, most prolific, most profitable and best flavored Lima bean now in existence. Like every other vegetable, it must have proper culture. Plant 6 feet by 6 feet, leaving one stalk in each hill. If convenient, plant in a sheltered place about April 1st. You will then be gathering beans during September and possibly until January, and as soon as the crop has been gathered, prune as you would a grape vine. Soon new growth will appear and by May 1st you have a new crop as profitable as peppers or string beans or any other early vegetable. During July the vines will show age and become mildewed; prune as before and in October you will begin gathering your third crop. Continue pruning twice a year; irrigate and fertilize. (Pkt. 15c) (¼ lb. 20c) (½ lb. 35c) (lb. 60c) (10 lbs. \$5.00 f. o. b. here).

There is nothing more profitable in a city garden than a dozen stalks of this wonderful bean. It is a common occurrence for our city customers to tell us of its great productiveness and excellent flavor.

One home gardener writes us that from one pound of seed planted in 1912 he gathered forty-two pounds of dry beans, besides all the green beans the family could use, and in 1913 he planted five pounds dry beans, and the first planting were then beginning to bear a second crop.



Monstrous Lima

This picture shows the enormous growth of the plants of the Monstrous Lima Beans. The stakes are seven feet tall. The vines are tied to the stakes because this is not a climbing vine but a bush. If not trellised will cover an area 12 feet in diameter.

Phenomenal Yield

SANTA MONICA.—Few persons can boast of as high returns per acre from an agricultural crop as can J. Harrod of 1443 Yale street, this city. Mr. Harrod in the fall of 1917 planted two town lots each 48x187 feet, or approximately two-fifths of an acre, to the monstrous Bush Lima bean. It lived through the winter very well and started bearing in the spring of 1918 at least one month earlier than any of the current season's lima crop. The first picking was made June 24 and the last December 14, when the crop was practically gone. Between these two dates Mr. Harrod gathered and sold 6174½ pounds or more than three tons of beans from this two-fifths of an acre. The total cash received from the crop amounted to \$273.94, which is at the rate of \$684.85 per acre. This is believed to be a record for returns per acre from city lot gardening in this section.

ATTENTION MARKET GARDENERS

If you are located in a nearly frostless section and have water available for irrigation, we do not think there is any more profitable crop for you to plant than the Monstrous Lima. Two crops a year indefinitely, about \$600.00 per acre each year. You will have green beans when all other varieties are out. Do not hesitate to accept this advice for its truth has been demonstrated repeatedly. The one serious drawback is the worm that eats the bean within the pod.

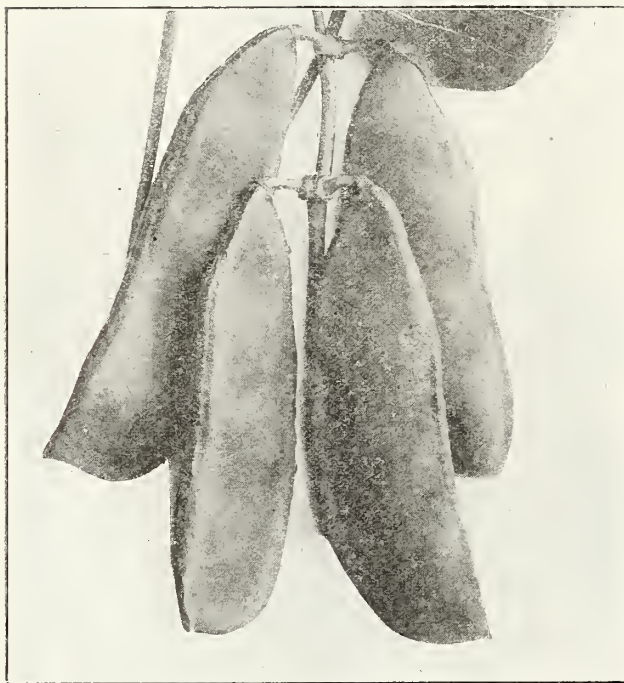
Bush Lima Beans

SPECIAL FOR MARKET GARDENERS.

The Bush Lima cannot be recommended too highly. The beans can be grown and gathered much more easily than the pole limas as the vines require no support. They can also be grown closer together. Dwarf limas are fully equal in quality to pole limas and as a rule are earlier maturing.

Limas require a longer season for maturing than other garden beans. Do not plant till the ground is warm and danger of frost is over. If possible select rich, light soil. Plant in drills two to three feet apart, dropping the beans three to four inches apart and covering one and one-half to two inches deep. Hoe often, but only when the leaves are dry.

Fordhook is the Gardener's Favorite



Fordhook

Fordhook Bush Lima In order to get the best results, plant one foot apart in rows $3\frac{1}{2}$ feet apart. It is an improvement over the well known bush Lima because it is more prolific. It is a strong grower, more resistant to blight, and is more profitable to grow for the market because the pods remain green. This is of great advantage to the peddler, retailer and shipper. It has received universal praise. We recommend it to our customers for both home and market gardens,—for the home garden because of its excellent flavor and productiveness; for the market gardener because it is demanded by the shipper and consumer. (Pkt. 10c) ($\frac{1}{2}$ lb. 30c) (lb. 50c prepaid) (10 lbs. \$3.75 f. o. b. here).

Improved Bush Lima This bean differs from the old bush variety in being ten days earlier. Will yield one-fourth more tonnage per acre. The pods contain four to five beans that are larger and thicker than the old bush lima. Where the Improved Bush Lima is known the old variety is no longer in demand. (Pkt. 10c) ($\frac{1}{2}$ lb. 30c) (lb. 50c prepaid) (10 lbs. \$3.75 f. o. b. here).

Henderson's Bush Small white Lima Bean, of excellent flavor and enormously prolific. It is grown so extensively here that it ranks commercially with common limas and other commercial varieties. It is used largely for canning. (Pkt. 10c) ($\frac{1}{2}$ lb. 25c) (lb. 40c prepaid) (10 lbs. \$2.75). Ask for quantity price.

Burpee's Bush Lima This bean has become very popular with the market gardener in all irrigation districts because it is earlier and more easily grown. There are no vines in the way when irrigating and cultivating. It is enormously prolific and keeps bearing a long time. (Pkt. 10c) ($\frac{1}{2}$ lb. 30c) (lb. 50c prepaid) (10 lbs. \$3.75 f. o. b. here).

Broad Windsor This variety is often called the tree bean because it differs from all other varieties in the nature of growth. It is not a vine or bush but one up-right stalk bearing pods at the axil of each leaf, continuously maturing from bottom to top throughout its period of growth. It is used largely as a green shelled bean. The best time to plant is in September because it thrives best in cool weather. It endures frost.

It is one of the best nitrogen gathering legumes, and on that account every garden should have a plot of these beans. This bean is also mentioned on page 61 devoted to soil renovators.

Limas, Pole Varieties

Write for quantity price

Pole Lima Pole varieties of Limas are far more profitable to grow than the bush varieties; what they lack in earliness they make up in continuous bearing. They should be planted from April 1st until September 1st.

The Skillman Lima This bean has been the market gardener's favorite for many years. It is a cross between the Burpee's Bush and the common lima. It will produce five sacks more per acre than the common lima. Each year we carefully hand-pick our seed stock, selecting only the true type of seed. There are no rattlers in the Skillman. (Per pkt. 10c) ($\frac{1}{2}$ lb. 25c) (lb. 45c prepaid) (10 lbs. \$3.50 f. o. b. here).

Large White Lima One of the best shell beans, either green or dried. Very prolific; pods large. (Per pkt. 10c) ($\frac{1}{2}$ lb. 25c) (lb. 45c prepaid) (10 lbs. \$3.50 f. o. b. here).

King of the Garden Very prolific; large and desirable both for the home garden and for the market gardener. (Per pkt. 10c) ($\frac{1}{2}$ lb. 25c) (lb. 45c prepaid) (10 lbs. \$3.50 f. o. b. here).

Carpenteria This is just the lima for the market gardener to grow for main crop. It is early and large, and enormously prolific, without much vine. (Pkt. 10c) ($\frac{1}{2}$ lb. 25c) (lb. 45c prepaid) (10 lbs. \$3.50 f. o. b. here).

Early Leviathan We recommend this variety to be planted where it may have a trellis to climb upon. It is the ideal lima for the home garden. It is very productive. The pods grow in clusters. (Pkt. 10c) ($\frac{1}{2}$ lb. 25c) (lb. 45c prepaid) (10 lbs. \$3.50 f. o. b. here).

AGRICULTURAL BOOKS

	Price	Pstpd.
A. B. C. of Agriculture, by Weld.....	.50	.55
Alfalfa, by Coburn .....	.75	.85
Art of Propagation, by Jenkins .....	.25	.30
Asparagus, by Hexamer .....	.75	.85
Avocado Industry, by Popenoe .....	.25	.30
Bean Culture, by Sevey .....	.75	.85
Bermuda Onion .....	.10	.15
Cabbage and Cauliflower, by Allen.....	.75	.85
California Fruit and How to Grow It, by Wickson	3.00	3.25
California Vegetables, by Wickson	2.00	2.25
California Garden Flowers, Shrubs, Trees and Vines	1.50	1.70
Second 1000 Questions in California Agriculture Answered, by Wickson	1.50	1.70
Campbell's Soil Culture Manual, 350 pages.....	2.50	2.75
Campbell's Soil Culture Primer, 100 pages .....	.50	.60
Campbell's Progressive Agriculture, 1916.....	1.10	1.20
Celery Culture, by Beattie .....	.75	.85
Cereals in America, by Hunt	2.00	2.20
Clovers and How to Grow Them, by Shaw.....	1.50	1.60
Chrysanthemums, by Herrington .....	.75	.85
Date Growing, by Popenoe	2.25	2.40
Farm Grasses of the United States, by Spillman	1.60	1.75
Flax Culture .....	.30	.35
Grasses Other Than Grasses, by Shaw.....	1.60	1.75

	Price	Pstpd.
Garden Beautiful in California, by Braunton...	1.00	1.10
Garden Helps, by Hall .....	.75	.85
Ginseng, Kain's Book on .....	.75	.85
Grasses, by Phare	1.00	1.10
Grasses and How to Grow Them	2.00	2.10
Insects and Insecticides, by Weed	1.60	1.75
Irrigation Farming, by Wilcox	2.00	2.20
Irrigation for the Farm, Garden and Orchard, by Stewart	1.50	1.70
Making a Living on an Acre, by Ritchey .....	.25	.35
Mushroom Culture, by American Spawn Co....	.35	.40
Mushrooms and How to Grow Them	1.50	1.65
New Onion Culture, by Grenier .....	.75	.85
Peanut Culture, by B. W. Jones .....	.50	.60
Potatoes, by Fraser	1.00	1.15
Pruning Manual, by Bailey	2.00	2.20
Rhubarb Culture, The New by Morse & Fiske..	.75	.85
Soils, by Burkett	1.25	1.40
Spraying Crops, by Weed .....	.75	.85
Strawberry Culture, by A. S. Fuller .....	.40	.50
Sweet Potato Culture, by Fitz .....	.75	.85
Talks on Manures, by Harris	1.75	1.90
Tobacco Culture .....	.25	.30
Tomato Culture, by Tracy .....	.75	.85
Tomato Culture, by Root .....	.35	.40
Wheat by Eyck	1.50	1.70

Commercial Beans

If Interested, Read This Page, It Is Up-to-Date
Write for Quantity Price

Bean Culture

Address: College of Agriculture, University of California, Berkeley, California. Ask for Bulletin No. 294, entitled, Bean Culture in California. It is thoroughly Californian and complete in every detail from preparation of the soil, planting, cultivating, harvesting and marketing.
If you are interested even in a small way it will prove both interesting and valuable.
Also write: United States Department of Agriculture, Washington, D. C., for Farmer's Bulletin No. 907. It contains some practical illustrations. They will be sent free.



Reading from left to right:—Broad Windsor, Lewis Lima, Henderson Lima, Red Kidney, Pinto, Pink, Garvanza, Mexican Red, Blackeye, Lady Washington, Navy, Tepary, Soy, Lentil.
Be sure to consult us when in the market for these varieties.
If only one pound is desired, send 35c to cover packing and postage. For larger quantities, ask for the prevailing prices.

Ask for price at the time of purchase. Because of the close margin at which this seed is sold, no price can be set in advance of the daily market. We have the best cleaning facilities on the Coast. All our seed is re-cleaned and even hand-picked when machinery fails.

MARKETING. If you have not contracted with some buyer in advance for your crop, when ready to sell send or bring a sample to us and we will endeavor to put you in touch with a buyer and post you concerning the market.

All commercial beans should be planted in large acreage. It is easier at any time to dispose of a carload than less, and more profitable to the out-of-the-way grower who must always pay the freight to some central warehouse. It is advisable for the small rancher when contemplating the planting of beans, to agree with his neighbors to jointly plant not less than eighty acres, as it requires 80,000 pounds to make up a carload for Eastern shipment.

It often requires fifty cents per hundred pounds to ship small quantities to a warehouse, whereas a carload would be shipped direct from your nearest siding at no cost to you, thereby saving to you and your neighbors four hundred dollars on each carload.

Massachusetts Snow Drop In appearance is like the Lady Washington. It was first grown here about four years ago, since which time it has steadily grown in popularity. Mr. Geo. Trapp of Norwalk says: "It yielded 20 sacks per acre, which is more than I ever got from any other small white bean, besides it was planted on a piece of ground so worthless I would not have planted it to anything else." It is of purest white color and equal to, or better than the other small whites for the table. Be sure to plant enough of this bean to grow a seed supply for next year.

The Lewis Lima The common lima is grown so largely in California that it easily exceeds in acreage all the other varieties combined. There are many strains of the common limas, but the Lewis is conceded to be the best. Our seed is all carefully rogued in the field and hand-picked under our supervision at our warehouse. You will find no splits nor rattlers in our seed. It is a short-sighted policy to buy cheap seed from grocers.

Tepary A small white bean similar to the Navy. The Agricultural Experiment Department has recognized the great merit of the Tepary as a drought resistant bean, and recommended it to be grown on the mesa lands where it is too hot and dry for our common varieties to grow. It is also recommended for a summer cover crop and soil renovator, as it needs no irrigation. It yields 20 sacks of dry beans per acre.

On account of the slow market for the 1918 crop the growers of the Tepary have been discouraged, and the 1919 acreage much reduced. But those who planted it last season along with other varieties, further emphasize the fact that the Tepary outclasses all others in yield against unfavorable conditions.

The tepary will yet become a standard popular bean because it is good as any when properly cooked and will yield where other varieties fail.

Pink, Mexican Red, Red Kidney All three of these varieties are good table beans. The PINK is grown more largely because it is more profitable to the grower and finds ready sale. The MEXICAN RED is the popular bean in Mexico, and should be grown more largely here. As a table bean it is excellent, both as a dry bean and as a green shell bean, and will become more popular as it becomes better known. The RED KIDNEY is an old-time favorite and commands a higher price than other varieties. It is more hardy and more rust-resistant. The pods are long and straight, bearing six to eight beans. It is particularly easy to thresh, yet does not pop in the field.

THE WHITE WONDER A new White Bean of great merit as a string bean for the home or market garden or a commercial bean for the large grower. The bean that will thrive in any condition under which the Pinto will grow or where the Navy will fail.

The bean that will win in any market against the Pinto because for eating, it is equal to, or better.

It is a pure white bean about the size of the Pinto.

It is as hardy and more prolific than the Pinto.

It is earlier, and ready for the thrasher in seventy days.

It is classed as a bush bean but inclines to short runners that bear freely.

Mr. Riding, our grower, says "Give it a strong indorsement as a table bean both green and dry, and say that it showed no mildew or rust."

From thirty pounds of seed planted, Mr. Riding harvested 1600 pounds.

Mr. Planter, do not hesitate to plant this WHITE WONDER BEAN! (Pkt. 10c) (lb. 40c) (10 lbs. \$3.00) f. o. b. here.

DO NOT FAIL TO GET SOME OF THIS NEW BEAN
Early Washington This new bean was introduced into Tulare County, two years ago. It is ten days earlier than the Lady Washington, is more resistant to mildew and yields several sacks more beans per acre. The appearance is the same but by every comparison this early bean is better than the well known Lady Washington. So much better that all of the first crop was sold to neighbors at fifty cents per pound.

We have secured a limited amount of this seed which we offer. (Lb. 40c postpaid) (10 lbs. \$2.50 f. o. b. here).

French White was introduced at Vista, San Diego County, in 1902, by Mr. Peter Delpy, who brought the seed from France. It at once became popular locally because it is earlier and more prolific than the Lady Washington which it resembles. It is a more rampant grower. The pods are tender and stringless.

A. H. Huchting, of near Encinitas, reports that he is planting this year 800 acres of lima beans and 200 acres of the new white French beans, a total of one thousand acres. Mr. Huchting states that 15,000 sacks of the new white French bean were harvested in San Diego county last year, all of them being a product of the small sack of beans that was imported a few years ago by Mr. Delpy, of Vista. They are wonderful producers.

Lady Washington and Navy These two varieties go hand in hand. Both are small white beans, but the Navy is slightly smaller and is often distinguished by being called the Small White, while the Lady Washington is called the Large White, yet the largest is a scant half-inch long, while the Navy is scarcely more than one-fourth inch long.

The Navy is more rust resistant.

The Blackeye This bean is always profitable to the grower because it yields 1500 to 2500 pounds per acre without irrigation, and on almost any kind of soil. It is a good cover crop and soil renovator. The beans find ready market at a fair price, but usually below that of other varieties. Rabbits will not eat the Blackeye.

Pinto This bean originally from Siberia is of such excellent flavor and quality that it has supplanted the pink and all other old time favorites.

Its popularity is also because of its adaptability to arid climate, high altitude and unfavorable soils.

It now probably ranks first in agricultural products of New Mexico. It is largely grown in Colorado. It was the first bean to be bought up by the government. We strongly advise growers to give favorable consideration to the Pinto because of the ready market, and also to growers whose soil and climatic conditions are unfavorable for other varieties. Growers along the coast and in low places should give preference to planting imported seed; it has proven more resistant to mildew and rust.

COMMERCIAL BEANS---Continued

Soy Bean This bean should be grown as extensively as the lima, or Pinto. The only reason that it does not take first rank is because of the importation from the Orient of the bean and oil of the bean, valued at many millions of dollars. With a proper protective tariff, California lands and orchards as well as the growers' finances would be enormously benefited by growing this bean.

Soy beans are harder than common beans, thus may be planted earlier.

Cultural instructions are about the same as for other bush beans.

There are many varieties of Soy Beans, some of little value for seed or forage. The Mammoth Yellow is the most popular, and we consider them the best since they produce two to three tons of hay per acre and ten to twenty-five bushels of seed.

Unlike Cow Peas, Soy Beans mature all their pods at the same time.

Soy Beans will withstand frost when young or when nearly matured, that would be fatal to Cow Peas.

The Tennessee Agricultural Experimental Station states the feed value of Soy Beans for beef cattle is about double that of Cow Peas.

Soy Bean hay is practically identical in feeding value with Alfalfa.

Biloxi Soy Bean The Biloxi is a very late, coarse, erect, bushy variety which makes a rank growth with an excellent yield of seed. As it requires a long season for ripening it should be planted as early as April if possible, and certainly before the end of May. The plants grow to a height of 4 to 6 feet and branch widely, so that they should be given an abundance of room. On rich soils the rows should be 4 feet apart, and the plants at least a foot apart in the rows, thus only a small amount of seed is required. This variety is recommended for green manuring, for seed production, and for silage.

Henderson Bush (Baby Lima) Grown almost exclusively for canning for which purpose it is used in enormously large quantities; but because of its hardness its adaptability to unfavorable climatic conditions the acreage has increased to a production beyond the demand, but not beyond consumption.

Unfortunately the consumer is supplied with beans from Siberia while the domestic bean lies in warehouses. A protective measure would greatly aid the bean grower at no additional expense to the consumer and put millions of dollars in circulation here instead of to speculators abroad. This observation applies to other varieties of beans as well as to the Baby Lima.

Like Cotton and Rice, the Baby Lima is now being grown in places heretofore believed ill-adapted. But Coachella Valley is coming to the front as a lima bean section. Surely Imperial and Palo Verde Valleys can do as well.

The Baby Lima is about as hardy as the Blackeye and Tepary and always command a ready market at a better price.

Among the "News Items" dated September 24, 1919:

The representatives of several Bean Growers' Associations of the various bean growing sections of the United States met in conference at San Francisco, to petition Congress for relief against the importation of beans from the Orient of which 200,000,000 pounds had arrived since January 1st at a price of 3 cents per pound.

The estimated cost to grow beans in California is 7 cents per pound, at which price the imported beans are put on the market here. The difference is added to the profit of the oriental speculator, therefore the public is not benefited but the California bean growing industry, which is the third largest industry in the state, is seriously threatened.

A WORD ABOUT RUST AND MILDEW

The enormous loss from rust and mildew in 1918 clearly demonstrated that some varieties of beans are more susceptible than others, and for 1919, growers were careful to avoid planting those varieties that had proven so disastrous the year before. The result is that we have heard of very little complaint during the past season.

The Lady Washington, Pink and the American Grown Pinto, suffered most, while the Navy, Siberian Pinto, Massachusetts Snow Drop, Blackeye and Tepary were resistant.

With regard to setting pods in hot weather, the Pinto, Tepary, Davis White Wax, Blackeye and Western White Wonder are famous for their endurance against a hot dry atmosphere.

The Blue Pod Navy is very prolific in low heavy coast lands but will not set pods in arid climatic conditions.

Lima Beans have not been considered in the above remarks because they are generally satisfactory in Lima growing sections.

Three Most Valuable Books for California

By Edward J. Wickson, A. M.

Professor of Horticulture in the University of California; Editor of the Pacific Rural Press; Member of the National Council of Horticulture, etc.

The California Fruits and How to Grow Them

Price \$2.00; postpaid \$2.15

The California Vegetables in Garden and Field

Price \$2.00; postpaid \$2.15

California Garden-Flowers, Shrubs, Trees and Vines

Price \$1.50; postpaid \$1.60

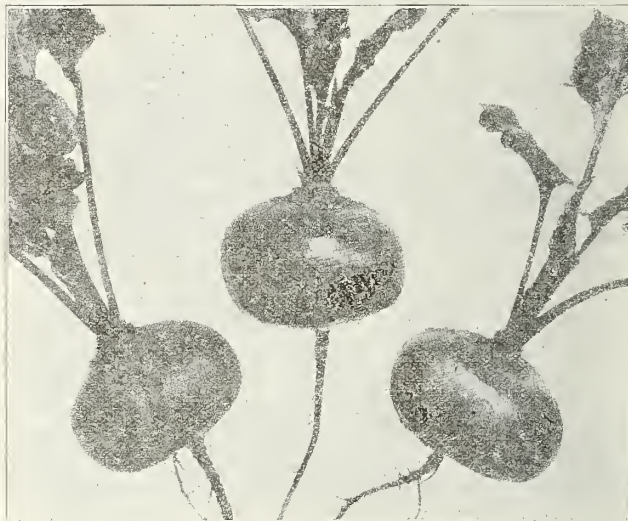
These three books are standard and authentic works on these subjects of fruit growing, vegetable raising, and general flower gardening about the home. Written by one who knows California conditions thoroughly. Other books are listed on Page 16.

A & M Table Beets

MARKET:—Besides the every-day demand at the local market places, there is the seasonable demand from outside points and for this purpose planting should range from August 1st until January 1st. See the shipper for further information. The canneries too use a large acreage. If you are conveniently located you will be fortunate to secure a contract with one of them.

Culture Beets may be planted all the year round where the temperature does not linger below 25 degrees. Sow the seed one inch deep in well prepared, moist soil in rows eight or ten inches apart, or on ridges same as lettuce. Drill eight pounds of seed per acre. Thin out to one plant every three inches, and transplant the discarded plants in any convenient spot about the garden. The Egyptian is a small, dark red, flat, smooth variety. It is sweetest and best for the table. Irrigate about every two weeks, unless the nature of the soil is such that more frequent irrigation is found to be necessary. Mulch the soil after each irrigation. Beets are ready for use in ten weeks and continue in prime condition for another ten weeks.

Two ounces of seed for 100 feet of row.



Early Flat Egyptian

Early Flat Egyptian The market gardener's favorite on account of its beautiful appearance, earliness, and excellent flavor. (Pkt. 5c) (oz. 15c) (¼ lb. 45c) (½ lb. 65c) (lb. \$1.25) postpaid.

Early Blood Turnip Of large growth. Flesh very tender and retains its blood-red color when cooked. On account of its tall leaves it is a favorite summer time beet with market gardeners. (Pkt. 5c) (oz. 15c) (¼ lb. 45c) (½ lb. 65c) (lb. \$1.25) postpaid.

Crimson Globe This splendid variety has now been grown quite extensively in many sections of the country and the many good reports received from old customers indicate that it gives most thorough satisfaction. It is of medium size, generally about three inches in diameter, very handsome in shape, with a remarkably smooth surface. It has a very small tap-root. Gardeners prefer it for summer planting because the large foliage protects the beet. (Pkt. 5c) (oz. 15c) (¼ lb. 45c) (½ lb. 65c) (lb. \$1.25).

Eclipse Is a favorite for the family garden, very sweet, tender and of fine texture. (Pkt. 5c) (oz. 15c) (¼ lb. 45c) (lb. \$1.25) postpaid.

Early Crosby A long time favorite for the family garden. (Pkt. 5c) (oz. 15c) (¼ lb. 45c) (½ lb. 65c) (lb. \$1.25).

Half Long Blood Smooth, growing to good size; color dark red; top small, of upright growth. (Pkt. 5c) (oz. 15c) (¼ lb. 45c) (½ lb. 65c) (lb. \$1.25) postpaid.

A & M Bassano Beet Excels all other varieties for table use. Its delicious flavor, entire absence of fibre, smooth symmetrical shape and small root puts it in a class by itself for all-round good qualities. The market gardeners have recognized this for years and many will have no other. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (½ lb. 75c) (lb. \$1.50) postpaid.

Detroit Dark Red This is an ideal beet for all purposes. It cannot be excelled for the table; free from all fibre and very sweet. It is the best of all for pickling. Even the tops are good when pickled. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (½ lb. 75c) (lb. \$1.50) postpaid.

When beet tops are young and tender they may be cooked as spinach and are as good. The stem may be par-boiled and pickled for immediate use.

A & M Stock Beets



Golden Tankard

Half Sugar Rose

Mammoth Long Red

Klein Wanzleben

Sludstrup

Golden Globe

Giant Yellow Intermediate

Note—Prices on half pound and pound quantities include postage or expressage prepaid. When sent otherwise deduct 10 cents per pound or fraction thereof. If desired sent by Parcel Post, necessary postage should be added. See our Parcel Post Schedule on cover page. If quantities are desired, do not fail to write for special prices, as all field seeds are subject to market fluctuations.

Culture—May be sown all the year round in drills one foot apart. Thin out to stand six inches apart in rows. Keep well cultivated; 8 pounds of mangel, or 10 pounds of sugar beet seed will plant an acre and yield 20 tons or more beets.

Sludstrup This variety is more extensively grown in Holland by dairymen than any other. Its uniform growth of large well-shaped beets rich in saccharine, its record for producing rich milk and sweet butter, has made it the popular beet of that country. We are always on the lookout for something better to offer our trade. We are sure you will add dollars to your dairy by planting the Sludstrup. (Pkt. 5c) (½ lb. 40c) (lb. 80c) postpaid; (10 lbs. \$7.00) f. o. b. here.

Giant Yellow Intermediate A large variety always in favor with dairymen because it is rich, healthful to the stock, yields large tonnage per acre, and easily gathered. (Pkt. 5c) (½ lb. 40c) (lb. 80c) postpaid; (10 lbs. \$7.00) f. o. b. here.

Mammoth Long Red Mangel The largest Stock Beet. Yields 40 to 50 tons to the acre. Will grow in land containing more alkali than any other beet. All stock except horses eat it readily. (Pkt. 5c) (½ lb. 40c) (lb. 80c) postpaid; (10 lbs. \$7.00) f. o. m. here.

Golden Tankard Mangel Contains more sugar and less water than any other Mangel. Rich in milk-producing qualities, hence a favorite with dairymen. Horses will eat it. (Pkt. 5c) (½ lb. 40c) (lb. 80c) postpaid; (10 lbs. \$7.00) f. o. b. here.

Golden Globe Similar to the Golden Tankard but roots deeper. It grows to large size. Its quantity is always satisfactory. (Pkt. 5c) (½ lb. 40c) (lb. 80c) (10 lbs. \$7.00) f. o. b. here.

Half Sugar Rose A distinct type of Sugar Beet, producing not only a good crop, but roots of giant size and richest feed quality. It has yielded 55 tons per acre, several tons per acre more than the heaviest producers of other sorts on the list. They have a small top, and are easily trimmed. The roots are heavy, but are so easily harvested that they may be up-rooted by a push of the foot. The flesh is white, solid, tender and very sweet and imparts a rich, pleasant flavor to dairy products, when fed to milk cows. Also particularly good for fattening hogs. Half Sugar Rose is a profitable Stock Beet to grow. It is also the earliest to mature; it may be fed four weeks earlier than other varieties. (Pkt. 5c) (½ lb. 40c) (lb. 80c) postpaid; (10 lbs. \$7.50) f. o. b. here.

Klein Wanzleben (Sugar Beet). This variety is without question the best in cultivation. Not the largest in size, but the richest in saccharine. It will fatten hogs as quickly as grain. (Pkt. 5c) (oz. 15c) (½ lb. 65c) (lb. \$1.25) postpaid; 10 lbs. \$10.00) f. o. b. here.

A & M SWISS CHARD



White Swiss Chard

Culture—Same as for beets; transplant 12 inches apart in rows 18 inches apart.

Grown for its leaves only; one of the best early greens. Cook the leaves as you do spinach and the stems in cream as asparagus. Leaves grow to enormous size, 20 inches to 2 feet in length. The plant is almost perpetual if kept trimmed, but it is better to have a new crop every year. The tender leaves make it a desirable plant for poultry greens; much more desirable than alfalfa, because it can be grown with less care and in any convenient place about the premises. Try it for your hens.

Lucullus (Pkt. 5c) (oz. 20c) (¼ lb. 60c) (½ lb. \$1.00) (lb. \$2.00) postpaid.

White Swiss (Pkt. 5c) (oz. 20c) (¼ lb. 60c) (½ lb. \$1.00) (lb. \$2.00) postpaid.

A & M Brussels Sprouts



Brussels Sprouts

Culture—Same as Cabbage.

One oz. of seed will produce about 5,000 plants.

For Aphis—Spray with "Black Leaf 40."

This excellent vegetable, considered the most delicious of all the cabbage family, is finding increased demand in the public markets, and should be grown more largely. It is a long season grower and ranks as to time with our late varieties of cauliflower. Therefore, seed should be planted for succession from July 1st until Nov. 1st.

The increasing demand has spurred us on to look for something better than has hitherto been offered on this market. We have succeeded in securing a medium dwarf variety that bears larger heads, and every joint a head. (Pkt. 5c) (oz. 30c) (¼ lb. \$3.00) (lb. \$6.00) postpaid.

Market:—The demand for Brussels Sprouts is probably in excess of the supply, but the cost of production is so high that it must be classed as a luxury. We recommend it highly for the home garden.

A & M ST. VALENTINE BROCCOLI

Culture and market the same as Cauliflower.

Broccoli (A hardy strain of Cauliflower) is grown largely in Oregon. Eighty-four carloads were shipped from the Umpqua Valley in the Spring of 1917.

It is much harder than Cauliflower, readily withstanding a temperature of 15 degrees. Planted in July it matures in April, yielding nearly 100 per cent good heads regardless of weather conditions. Large gardeners will do well to plant it.

St. Valentine (A pure white strain) is the best. Our seed is of the English type grown extensively in the north. (Pkt. 15c) (oz. \$1.50) (¼ lb. \$5.00) (lb. \$15.00). We have ceased to catalog other varieties.

A & M CHINESE CABBAGE



Chinese Cabbage

Culture—Grow it as you do lettuce; transplant 10 inches apart in rows 12 inches apart.

Boiled with beef or pork it is excellent, having a much more pleasing flavor than cabbage. The inner leaves make better cold-slaw. (Pkt. 10c) (oz. 50c) (¼ lb. \$1.50) (½ lb. \$2.50) (lb. \$5.00) postpaid.

Wake up to a good thing! Flood the Los Angeles market in order that our home people may become acquainted with it. Grow Chinese Cabbage and the demand for it will surprise you. Every home garden should have it.

Our seed is imported. It is the genuine article as pictured here and cannot be compared with the Pe-Tsai seed grown in Europe.

A & M Cabbage

Write University of California, College of Agriculture, Berkeley, Cal., for Circular No. 130, entitled "Cabbage Growing in California" by Stanley S. Rogers.

It should be borne in mind that the big planting of cabbage is intended to meet the eastern demand in midwinter and early spring, and that our time of planting is out of the natural season, and therefore often subjected to unseasonable weather which causes it to be stunted and often shoot to seed. The wonder is that any of it matures.

Improper culture, too, will stunt the normal growth of cabbage and cause the heads to prematurely go to seed.

Culture:—The secret of growing hardy plants is to thoroughly prepare the soil in the plant bed. Loosen the soil to a depth of eight or ten inches, pulverize well. Sow in drills not too freely, about one-half inch deep, press the soil firmly over the seed; this is important. In about six weeks transplant in rows three feet apart, one foot in the row for Winnigstadt, eighteen inches for large-heading varieties. Keep the crop well watered and cultivated for when growth is checked the seed head matures and bursts forth as soon as moisture is again applied. This accounts for much cabbage going to seed. Early varieties mature about three and one-half months after transplanting, late varieties in about five months.

Should there be a cold spell when the thermometer lingers below 25 degrees, just at the time the cabbage begins to head, you may expect twenty-five per cent of your crop to shoot to seed.

One large and constant grower says: "November transplanting escapes the hard winter season that causes so much loss by shooting to flower."

For the Cabbage Worms:—We do not hesitate to recommend Paris Green to be used up to two weeks before marketing the cabbage, because the spray only reaches the outer leaves that are not eaten, and because within two weeks the elements neutralize the poison. Also when only one tablespoonful of Paris Green is mixed with four gallons of water and kept well agitated there could not possibly be poison enough on a head of cabbage to even make anyone sick. Add 1 cupful of flour paste to make it adhere.

For Aphis:—Spray with Black Leaf 40. Direction: One tablespoonful to two gallons of water. Add about ¼ lb. of soap. Add one teaspoonful Paris Green to destroy the worm also.

Marketing:—The everyday demand at the local market should be met with the most palatable varieties like the A. & M. Early Drumhead, Copenhagen Market and Glory of Enkhuizen.



Winnigstadt Twenty-six Years the Standard

Winnigstadt No other vegetable listed in our catalog has retained its popularity so continuously and for such a long time as our strain of Winnigstadt Cabbage, introduced by us in 1896. It is now, and has been ever since that date, the most popular cabbage grown in Southern California. It is popular because it is early, solid, good flavor, sure header, and good shipper. (Pkt. 5c) (oz. 60c) (¼ lb. \$2.00) (½ lb. \$3.00) (lb. \$6.00) postpaid.

Henderson Early Summer A good medium-sized early flat head, very desirable for the table. (Pkt. 7½c) (oz. \$1.50) (¼ lb. \$5.00) (lb. \$15.00) postpaid.

A & M CABBAGE---Continued



Glory of Enkhuizen

Glory of Enkhuizen The grower when introducing this variety pronounced it the ideal for the home and for Liberty Cabbage, surpassing all others in excellence of quality and flavor. It is similar in shape and habit to the Danish Ballhead, just ideal for the local market. (Pkt. 5c) (oz. 85c) (¼ lb. \$2.85) (lb. \$8.50).

MR. J. H. BECKHAM says—"I transplanted Glory of Enkhuizen Cabbage, September 20, and began marketing December 10, just 80 days. At least 90% headed perfectly. None shot a seed. Heads run about 12 lbs."

Hollander Is one of the best of all the hard heading varieties. The heads are thick, round, of medium size and solid as a rock; of good flavor and heads well in our winter climate. It is a desirable sort for gardeners. (Pkt. 10c) (oz. 85c) (¼ lb. \$2.85) (½ lb. \$4.25) (lb. \$8.50) postpaid.

Copenhagen Market



Copenhagen Market

gardens. (Pkt. 5c) (oz. 85c) (¼ lb. \$2.85) (½ lb. \$4.25) (lb. \$8.50) postpaid.

LIBERTY CABBAGE. From the Arizona agricultural extension service we have the following directions for making Liberty Cabbage:

Shred the cabbage finely, using a shredder which cuts it into long thin strips. Have a barrel or keg perfectly clean and well scalded. Mix a pint of sugar and a pint of salt and sprinkle about a tablespoon over the bottom of the barrel.

Shred the cabbage into the bottom of the barrel to a depth of about six inches, and over this sprinkle a heaped tablespoon each of sugar and salt. Then pound the cabbage well, shred in some more, sprinkle on more salt and sugar, and pound again. This process is continued until the barrel is full, and the more the cabbage is pounded the better.

Place a cloth over the top of the cabbage and fit a board cover inside the top of the barrel so that it will settle down under the weight of a rock or something heavy placed thereon. Set this in a warm place to ferment. In about three-days the juice will come up and cover the cabbage; fermentation will begin at once and it will be ready to eat in about four weeks.

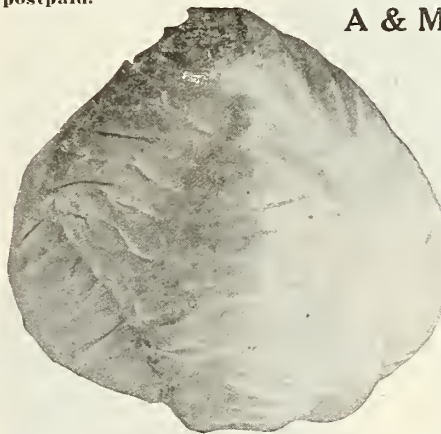
Our European grower has given great praise to this variety. It is earlier, larger and better than the Winnigstadter for the local market. It is grown more extensively for the markets of Northern Europe than any other variety. It excels because of its extreme tenderness and delicious flavor, which is compared with cauliflower. We give it urgent recommendation to growers for the home market and for home

A & M Early Drumhead Year by year this variety becomes more and more popular. It is very early, tender, crisp, and just the right size for the dealer. Truckers like it because every stalk produces a head. (Pkt. 5c) (oz. 60c) (¼ lb. \$2.00) (½ lb. \$3.00) (lb. \$6.00) postpaid.



A. & M. Early Drumhead

Danish Ballhead Since our introduction of this short-stemmed type of the Danish Ballhead, it has rapidly grown into popularity with both the grower and the shipper. Why? Because it is a sure header, adaptable to all soils. Heads are solid and uniformly round. It is a good shipper and is not surpassed for table use. (Pkt. 10c) (oz. 85c) (¼ lb. \$2.85) (½ lb. \$4.25) (lb. \$8.50) postpaid.



Scott's Cross

A & M Scott's Cross

Our seed is pure. The introduction of this cabbage into the Southwest means millions of dollars to the growers. An ordinary average yield of Winnigstadter per acre is eight to ten tons. Scott's Cross will average twelve to fourteen tons of a better grade. This means about fifty dollars per acre more at no greater expense. Scott's Cross is one of the best to grow for shipping. It is a cross between the Winnigstadter and the Flat

Dutch. It promises to outrank the Winnigstadter, but up to the present time there has been some variation as to its type and uneven maturing, but it is such an excellent cabbage because of its hardness that we have contracted with our seed grower to make a perfect type by selection. Our 1919 crop is a perfect type of the Scott's Cross, as pictured here. We received our 1919 crop of selected pedigreed seed in November. We wish all cabbage growers to give it a trial this spring, that you may not hesitate to plant it next fall. (Pkt. 10c) (oz. \$1.00) (¼ lb. \$3.35) (½ lb. \$5.00) (lb. \$10.00) postpaid.

All Seasons The heads are extremely solid, round, flattened on top and ready to market nearly as early as Early Drumhead, while considerably larger in size. It is called "All Seasons," because it is as good for autumn or winter as for early summer. (Pkt. 5c) (oz. \$1.00) (¼ lb. \$3.35) (½ lb. \$5.50) (lb. \$10.00) postpaid.

Large Late Flat Dutch A large sure header. A standard sort for late crop. Preferred for making liberty cabbage. (Pkt. 5c) (oz. 60c) (¼ lb. \$2.00) (½ lb. \$3.00) (lb. \$6.00) postpaid.

American Drumhead Savoy The best of all Savoy. Short stump, large size, solid head. (Pkt. 5c) (oz. 60c) (¼ lb. \$2.00) (lb. \$6.00) postpaid.

Improved Red Heads of deep color and remarkably solid. Excellent for slaw. (Pkt. 10c) (oz. 70c) (¼ lb. \$2.35) (lb. \$7.00) postpaid.

Autumn King For four years this Giant Cabbage has astonished all who have seen it at the market. Heads weighing from forty to fifty pounds are not uncommon. It is tender and of excellent mild flavor, ideal for Liberty Cabbage, and it will yield more tons of good cabbage per acre than any other variety. (Pkt. 10c) (oz. 70c) (¼ lb. \$2.35) (½ lb. \$3.50) (lb. \$7.00) postpaid.

A & M Cauliflower

Cauliflower Seed An article appeared in one of the agricultural papers announcing that a grower harvested 1500 lbs. of seed from one acre of Cauliflower and offers the same for sale.

We consider we have done well to have saved 200 pounds of seed. After we have cut out, sold and destroyed all imperfect types we frequently have less than five hundred plants left on an acre, that are allowed to mature. That is why we have had not one complaint from local growers in twenty years, against our California Pearl Cauliflower which we grow at home. It is a sure header.

The fact that our customers continue to buy from year to year is the best evidence that our seed is satisfactory.

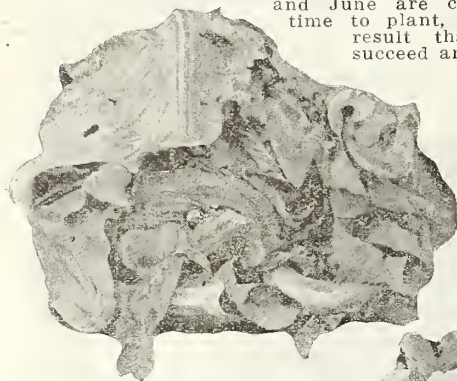
Market:—The local market consumes and distributes great quantities of early Cauliflower beginning November 1st and throughout the season until July, but it is the shipper who disposes of several thousand carloads. 25c a dozen heads was considered profitable but last season the prevailing price was much higher.

Culture:—Prepare the soil as for cabbage. Seed may be sown from June to the following March. Transplant when the plants are six to seven weeks old. When the stems have become hardened in the bed they will be likely to head prematurely. Set out the plants 18 inches apart, in rows three feet apart. Cauliflower should be kept growing constantly, as it may be injured by a check in any period of its growth, and go to seed; hence, irrigate freely. One ounce of seed produces 2,000 plants; requires six ounces to plant one acre.

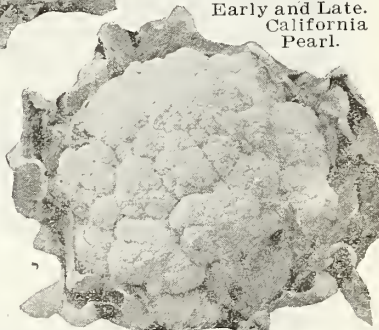
Last season again demonstrated the necessity of proper judgment as to time of planting, and also the important influence of the elements. Only a few years ago no grower planted cauliflower earlier than August, but year by year growers are crowding toward early planting, until now May and June are considered a proper time to plant, with the uncertain result that sometimes they succeed and sometimes fail to have good results.

A crop failure in August must not be attributed to the seed.

Year after year finds the market flooded with first class cauliflower from November until April. The Snowball variety prevails until January 1st, after which it is all the Early and Late California Pearl.



California Pearl
Trimmed for
Shipment



California Pearl
Trimmed for market
in New York.

California Pearl Cauliflower

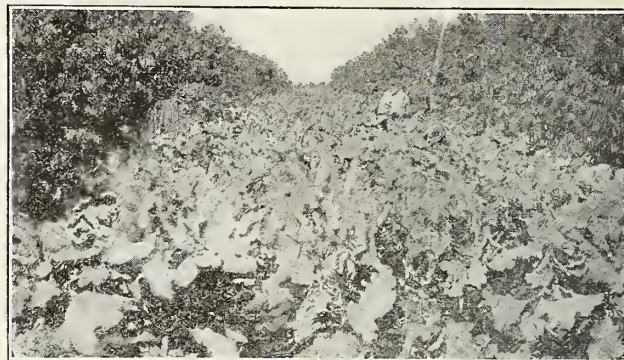
This variety is a favorite from California to New York, because of its excellent shipping qualities. It originated here and has made Southern California famous for her excellent cauliflower. The California Pearl is thoroughly adapted to our mild winter climate and is particularly suited for shipping because of the flower being completely enveloped within spiral curled leaves, which protect the flower from injurious exposure to rain, sunshine or frost, but particularly from injury in packing and in transit. It retains its fresh appearance longer than any other variety. It is decidedly the shipper's favorite. It is the gardener's, the dealer's and the consumer's favorite. To be packed for shipping it is only necessary to cut the stem at the base of the head, and the leaves about two inches above the head. This leaves foliage enough to cover the crown without wrapping in paper. These heads are packed two layers in a crate (16 inches deep), with the base at the top and bottom, the crowns facing the center, usually 24 heads per crate.

The small grower may plant at any time from May until February, but for profit the shipper should carefully pursue instructions given with each variety.

When you consider that the amount of cauliflower shipped from California each year runs into thousand of carloads, valued at nearly \$1,000,000, and practically all of it is the California Pearl, the value of this type is of so great importance that we are proud to have been the introducers of it.

Large Algiers One of the old standard reliable varieties that never disappoints the grower regardless of locality.

It is late maturing, plant seed in July, it will be ready to market in December and January. (Pkt. 25c) (oz. \$2.00)



California Pearl in a Young Walnut Orchard
Notice How Tall It Is

Early California Pearl Attains a height of three feet. Plant seed from June 1st until November. In six to eight weeks transplant twenty inches apart in rows two and one-half feet apart. (Pkt. 10c) (¼ oz. 65c) (oz. \$2.00) (¼ lb. \$6.65) (lb. \$20.00) postpaid.

Late California Pearl Attains a height of three to four feet. Plant seed July 1st to March 1st. In six to eight weeks transplant two feet apart in rows three and a half feet apart. (Pkt. 10c) (¼ oz. 65c) (oz. \$2.00) (¼ lb. \$6.65) (lb. \$20.00) postpaid.

Extra Early Snowball Has proven perfectly satisfactory for the past twelve years. Planted in June it can be marketed in November. It is the best early cauliflower yet offered by any seed house. (Pkt. 25c) (¼ oz. \$1.50) (oz. \$4.50) (¼ lb. \$15.00) (½ lb. \$22.50) (lb. \$45.00) postpaid.

California Mammoth Medium early. Is the largest variety grown anywhere in the world. It is not uncommon to attain 16 inches in diameter, while 10 and 11 inches is the average. It is of California origin. (Pkt. 10c) (oz. \$2.00) (¼ lb. \$6.65) (lb. \$20.00) postpaid.

Autumn Giant Heads large, firm and compact, thoroughly protected by foliage. (Pkt. 10c) (oz. \$1.50) (¼ lb. \$5.00) (½ lb. \$7.50) (lb. \$15.00).

Danish Giant or Dry Weather Dry Weather Cauliflower merits the confidence of all growers as an all year round variety. It has proven conclusively to be the best for early planting. We give it special recommendation for the first early and late planting. It requires rich soil and good cultivation, but will withstand more drought than any other variety. (Pkt. 25c) (oz. \$4.50) (¼ lb. \$15.00) (½ lb. \$22.50) (lb. \$45.00) postpaid.

Read This

L. Worthington, manager of our Market Branch, reports as follows in regard to the different varieties of Cauliflower: Plant no variety of Cauliflower earlier than July 1st to get the best results.

Snowball Cauliflower seed planted July 1st will be ready to cut about November 15th, and the crop will all be harvested by January 1st.

Early Pearl Cauliflower seed planted July 1st will be ready to cut about January 1st, and the crop will be harvested about February 1st, as it heads more evenly than the other varieties.

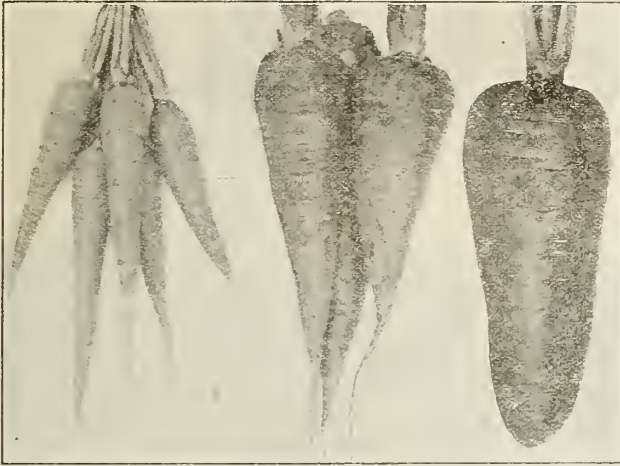
Late Cauliflower seed planted July 1st will start to cut about January 15th and will finish about March 1st.

Snowball Cauliflower plants should be transplanted at from 35 to 40 days after the seed is sown. If they are left too long in the seed bed it causes more or less of them to go to seed in the fall. The other two varieties can be left in the seed bed from 45 to 60 days without being detrimental to the crop. You must always bear in mind that anything that causes the plant to stop its growth any time either in the seed bed or in the field will cause the plant to go to seed, hence to get a successful crop keep the plant continually growing from the time the seed germinates until the flower is formed.

A Good Description from A. C. Simpson, San Jose, Cal.

You sent me a sample of your Pearl Cauliflower Seed to try out here. I made a sowing of it January 18, were planted in field March 15. Plants grew to good size but owing to most unfavorable weather did not get one head. Made the second sowing June 16, planted in field July 31 on same ground that the first plants had grown on. Set plants in rows 3 feet apart and 20 inches apart in the row. Have 60 dozen plants one-half of which will make good heads. Had I set them in rows four feet apart and three feet apart in rows I would have harvested a perfect crop. The larger ones stand four feet and will cover a space of ground if unconfined from four to six feet in diameter. The leaves of the larger plants are from 10 to 12 inches broad. They have roots like a year old fruit tree. I have had a great many people look at them, some of them Italian gardeners, all say they never saw anything like them before, and for the table there is nothing to equal them is the verdict of all that have tasted them. Do they always grow to such a size? The plants were crowded so that the stronger prevented the weaker from making the growth they naturally would have done. Was unable to get through the rows with a

A & M Table Carrots



Long Orange

Chantenay

Danver

SOMETHING NEW

SPICED CARROTS:—Stew Carrots until soft; make a syrup as follows: 2 cups brown sugar, $\frac{3}{4}$ cup vinegar; $\frac{1}{4}$ cup water; add mixed spices. Put into this syrup and cook until the juice has permeated them thoroughly; add a little salt. Carrots prepared in this way compare favorably with spiced peaches. Large carrots should be quartered, but the small ones usually discarded when thinning out, are just the proper size. They are not only delicious to eat, but decorative as well.

Culture—Sow one ounce of seed to 100 feet of row, four pounds per acre.

Carrots are very profitable because of the large quantity that a small patch can produce, and there is no waste, as any surplus may be fed to rabbits or other animals.

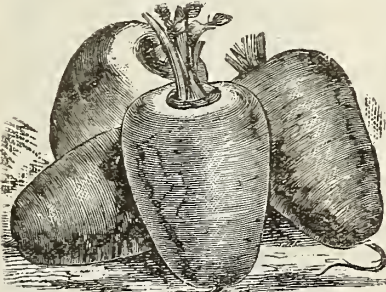
Carrots may be planted all the year round. Sow the seed from one-half to one inch deep in rich, moist, loamy soil, well prepared. Sow in rows eight inches apart, and as thin as the drill can be set to sow, or, if sown by hand, aim to have two seed to the inch, or sow on ridges same as lettuce. Plant the Oxheart variety. It is the best for the table, and the most attractive for the market. The carrot has few insect enemies. Nematode is the worst. Irrigate same as for beets. Carrots are ready for use in eight weeks and remain palatable for six months or longer.

Market:—The local demand for Carrots is all the year round, but the chief demand is from the shipper who wants them from December 1st until May. For this trade the seed should be planted in August and September. The shipper wants the Chantenay, Oxheart and Danver Half Long.

The canning of carrots is now a large factor, and favorable contracts may be secured.

There are many rabbit hutches within the city where carrots are used throughout the year. If you live a convenient distance from one of these places you may be able to secure a contract from the owner to furnish carrots.

Early French Forcing



French Forcing

A small sort, but desirable on account of its extra early habit. (Pkt. 5c) (oz. 15c) ($\frac{1}{4}$ lb. 50c) (lb. \$1.50) postpaid.

Danvers Half Long

The roots are smooth and of a rich, dark orange color. One of the best sorts for a main crop, because it remains edible in the field longer than other varieties. (Pkt. 5c) (oz. 15c) ($\frac{1}{4}$ lb. 45c) (lb. \$1.25) pre-paid.

Guerande or Oxheart Beautiful shape and color. The roots generally attain four or five inches in length and about three inches in diameter. Quality first rate, very tender, like the Early Gem, is the market gardener's favorite. (Pkt. 5c) (oz. 15c) ($\frac{1}{4}$ lb. 45c) (lb. \$1.25) postpaid.

Improved Long Orange A deep orange colored variety adapted for farm or garden culture. (Pkt. 5c) (oz. 15c) ($\frac{1}{4}$ lb. 45c) (lb. \$1.25) postpaid.

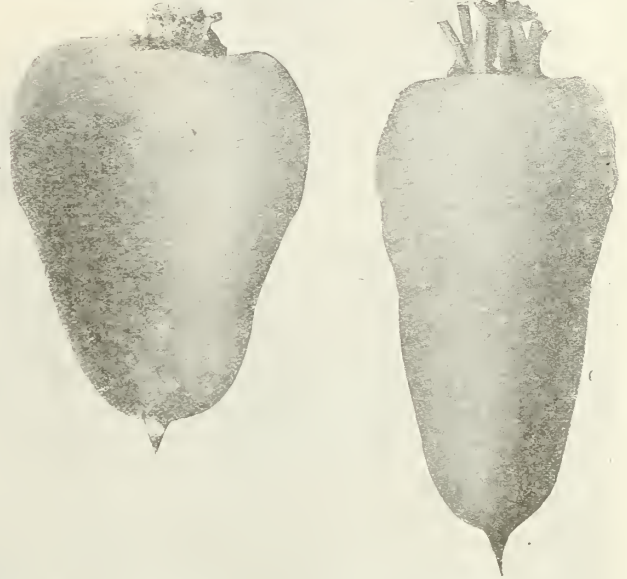
Chantenay Flesh is a deep golden orange color, always smooth and fine in texture, very tender. (Pkt. 5c) (oz. 15c) ($\frac{1}{4}$ lb. 75c) (lb. \$2.25) postpaid.

A NEW CARROT Los Angeles Market

We are offering for the first time a new carrot that measures up with our idea of what is wanted.

It is a cross between the Chantenay and St. Valery. Color dark yellow almost red, size, six inches long, one and one-half to two inches diameter at the crown, tapering to one inch near the tip. It averages larger than the Chantenay, retaining the quality of the St. Valery.

We wish you to try this new carrot and report to us after you have ate of it. (Pkt. 10c) (oz. 35c) ($\frac{1}{4}$ lb. \$1.00).



A & M Early Gem Somewhat resembles the Guerande or Oxheart, but is more uniform in shape, of finer texture and almost entirely free from the core usually found in other varieties. Flesh deep yellow, very tender and delicious in flavor. The roots generally attain from four to five inches in length and about three inches in diameter, although they have been grown to nearly double these dimensions. For bunching, the handsome appearance is a marked advantage over all other varieties. It is a favorite with many market gardeners. (Pkt. 5c) (oz. 15c) ($\frac{1}{4}$ lb. 50c) (lb. \$1.50) postpaid.

A & M Stock Carrots

Carrots are healthy food for stock of all kinds, and should be more generally grown.

Culture—Drill in rows 12 inches apart, and thin to three inches apart in the row. It requires five pounds of seed to plant an acre.

Half Long White Belgian Is raised exclusively for stock. Grows to a very large size; is easily gathered. Makes splendid food for cattle, horses and hogs; known to yield forty tons per acre. Will keep four or five months after pulling. (Pkt. 5c) (oz. 15c) ($\frac{1}{4}$ lb. 35c) (lb. \$1.10) postpaid.

Large Yellow Belgian Is similar to the above, but with a light orange color; said to be richer, but does not keep so well. (Pkt. 5c) (oz. 15c) ($\frac{1}{4}$ lb. 35c) (lb. \$1.10) postpaid.

Half Long Giant White The largest of all stock Carrots, and desirable because it does not grow to a great depth, and although six inches in diameter, there is no hard core. (Pkt. 5c) (oz. 15c) ($\frac{1}{4}$ lb. 35c) (lb. \$1.10) postpaid.

Mastedon (Cow Horn) Desirable because it stands well above ground, thus being easily harvested. Although six inches in diameter, there is no hard core. We give the Mastedon special recommendation to dairymen. (Pkt. 5c) (oz. 15c) ($\frac{1}{4}$ lb. 35c) (lb. \$1.10) postpaid.

COMPLIMENTARY

M. E. A. THOMASON, California

I have read with interest all your catalog which you so kindly mailed me. It is indeed rich in its offerings to planters. It is a real teacher, this catalog of yours, with a whole lot of reliable information not found in any other catalog ever sent to me, and feel sure if I utilize the information in my planting this year I will have a garden worth while. Will begin small at first with the A. & M. catalog for right hand man, and you shall hear from me again.

A & M Celery

Culture—Sow one-half ounce of seed to 100 feet of drill; $\frac{1}{4}$ lb. per acre. Sow the seed from Jan. 1st to May 1st, in drills six inches apart, not too thick in the row to secure stalky plants. In June when the plants are strong, transplant to furrows three feet apart and six inches deep. Set the plants six inches apart in the furrows; as the plant grows fill the earth toward the plant to secure proper bleaching. Never allow dirt to rest on the heart of the plant. Never work in celery when it is wet with rain or dew. Spray frequently with Bordeaux.



A Proper Way to Ridge Celery for Blanching

HINTS TO MARKET GARDENERS

Write College of Agriculture, Berkeley, Cal., for Bulletin No. 208, entitled "The Late Blight of Celery." See list of agricultural books, page 16. Read every page of this Catalog.

IMPORTANT

Celery Rot—Do not allow water to stand during the heat of the day after irrigating. It will cause Celery Rot in the early crop.

Seed Stem—Cultivate as soon as possible after irrigation; also when transplanting hot house plants, see that they are thoroughly hardened to the weather before transplanting. We are indebted to Rice Brothers for this information, and they demonstrated conclusively that this is correct. Failure to adhere to this rule will account for much of the celery going to seed.

Hollow Stem—When the growth is rank and the stalks so close that free ventilation of air is retarded during the hot weather, the stems become soft and hollow; therefore, we recommend single-row planting.

Market—The local consumption and outlying distribution disposes of a very large acreage, but owing to its erratic nature it requires peculiar soil and professional culture. Therefore, there are few localities where it can be forced to earliness. May, June and July celery brings a high price to the grower. Then there comes an oversupply until the shipper disposes of it. When a surplus exists cold storage is resorted to, with doubtful profit, on account of the perishable nature, the shrinkage and the expense.

Easy Blanching Celery An early green top variety that has become very popular in eastern celery growing sections because it requires only a few days to produce a marketable blanched celery. The advantage of this is apparent to the professional celery grower because it obviates that large percentage of loss always incurred during the process of blanching. (Pkt. 5c) (oz. 40c) ($\frac{1}{4}$ lb. \$1.35) ($\frac{1}{2}$ lb. \$2.25) (lb. \$4.00).

Golden Self Blanching (California grown seed.) Another year has demonstrated that our strain of California grown seed is equal to the imported in producing good celery.

Every grower in Florida who tried our California grown seed in 1917 ordered again in larger quantities for 1918.

The seed we offer was grown by an expert whose seed is now accepted by all who have used it as fully up to the imported. We offer it to you with our full recommendation. (Pkt. 15c) (oz. \$1.50) ($\frac{1}{4}$ lb. \$5.00) (lb. \$15.00) postpaid.

California Grown Golden Self-Blanching Celery Seed is now the accepted standard throughout the United States, and is giving such complete satisfaction that American growers are accepting it with absolute confidence, asking only to know the reliability of the seed. That ours is reliable is proven by a three-year record of satisfied growers.

Giant Pascal It is a green top, much superior to the California green top. It is a great favorite in the eastern gardens. (Pkt. 5c) (oz. 30c) ($\frac{1}{4}$ lb. \$1.00) (lb. \$3.00) postpaid.

Calif. Giant White Plume Best for home garden. We have now the grandest strain of White Plume Celery ever offered to the market gardener. One stalk frequently weighs above five pounds. It is solid, and crisp, with a decidedly salty flavor derived from the alkaline soil in which it was grown. On the peat lands it attains its highest perfection. (Pkt. 5c) (oz. 35c) ($\frac{1}{4}$ lb. \$1.15) (lb. \$3.50) postpaid.

Smooth Prague, Celeriac A large celery flavored root used extensively for flavoring soups, pickles, etc.; also relished sliced as a salad. (Pkt. 5c) (oz. 25c) ($\frac{1}{4}$ lb. 85c) (lb. \$2.50) postpaid.

Celery Seed for Flavoring Per lb. 50c postpaid.

AS A TEXT BOOK

Director of Vocational Agriculture, Santa Rosa High School, California.

We are working out a new plan of agriculture in the schools of Sonoma County. We have examined your seed catalog and find that it will be a valuable asset to our teachers and pupils for educational purposes. Would it be asking too much of a favor in requesting that your company send about 10 copies of your catalog to the enclosed list of teachers?

L. T. HULL, Vocational Supervisor, Hawaii

It is significant that the three finest gardens were all A. & M. Gardens. You have made many friends here and I believe can well afford to continue your interest in the School Gardens of Hawaii.

Remember your garden in Southern California works all the year; every month you may plant some seed that will keep fresh vegetables for your table every day in the year.

A & M Sweet Corn

Note Prices on half pound and pound quantities include postage or expressage prepaid.

Market:—There is a uniform local demand for sweet corn throughout the season, from the earliest day it is offered until the last field is harvested. Therefore, prepare to have some coming all through the season. Oregon Evergreen has not been surpassed since we introduced it twelve years ago. It is yet the best for the market gardener and the most productive.

Culture:—Plant from February 15th to September 1st in hills 18 inches apart, in rows three feet apart. Allow two stalks to the hill, break off all side shoots; cultivate after each irrigation until the corn shades the ground; irrigate every two weeks until in the milk, then once or twice a week, and this will produce a solid tight husk, which will prevent the worms from doing much damage.

We are ever on the lookout for something better than that which we have. We are constantly trying out new varieties that show merit, but we studiously refrain from offering to our customers anything new unless it is better than that which we have. It is this policy that has kept the Oregon Evergreen so prominently before you for many years as the money-maker for the market gardener. Read what follows.

A & M Oregon Evergreen

Oregon Evergreen Corn now has the endorsement of every gardener that grows for the Los Angeles market. We are safe to say that any gardener growing this will show to his customers its superiority over all other sweet corn. It is many years since we first offered this new and distinct variety. The demand has grown each year until it is now practically the only variety offered on the Los Angeles market. This excellent sweet corn has made wide progress in popularity during the season just past. It leads all other varieties at Portland, Oregon. The peddlers will have no other and one no longer hears the consumer complain about the poor quality of the California sweet corn. The advantages of this corn over all others are its earliness, its large size, rarely less than eight inches long. The grains are full to the tip.

The husk is very thick and folds so tightly over the grains that the worm does very little damage, compared with other varieties. It is desired by the peddler and groceryman because of its thick husk, and it can be held over two days before it appears old or wilted. It is very productive, often bearing five marketable ears. (Pkt. 10c) (½ lb. 20c) (1 lb. 35c) postpaid; (10 lbs. \$2.75) f. o. b. here.

A & M Early Adams This is a blend between the Oregon Evergreen and the Eastern Extra Early Adams. The superiority of this strain over the former eastern-grown Adams is shown in its earliness, large size and sweetness. It is nearly as good as the Oregon Evergreen, and is earlier and hardier. It is one of the many good things that originated here. Although it may be frosted when six inches high it will come again.

(Pkt. 10c) (lb. 30c) postpaid; (10 lbs. \$1.75) f. o. b. here.

A & M Large Adams

This is the best market variety to plant in August and September for late crop. It will mature in 56 days. (Pkt. 10c) (lb. 30c) prepaid; (10 lbs. \$1.75) f. o. b. here.

W. E. HIXSON,

Imperial Valley
"I am shipping by express one dozen of Adams Late corn to show how it did in the hottest season we have here. Would have done better but we were short on water. I think it will do fine here planted early or late, about the middle of August. It sells better here than the Mexican or Squaw Corn."

Golden Bantam

Probably the very earliest variety grown. Very sweet, none better for the home garden for first early. (Pkt. 10c) (½ lb. 25c) (lb. 40c) prepaid; (10 lbs. \$3.00) f. o. b. here.

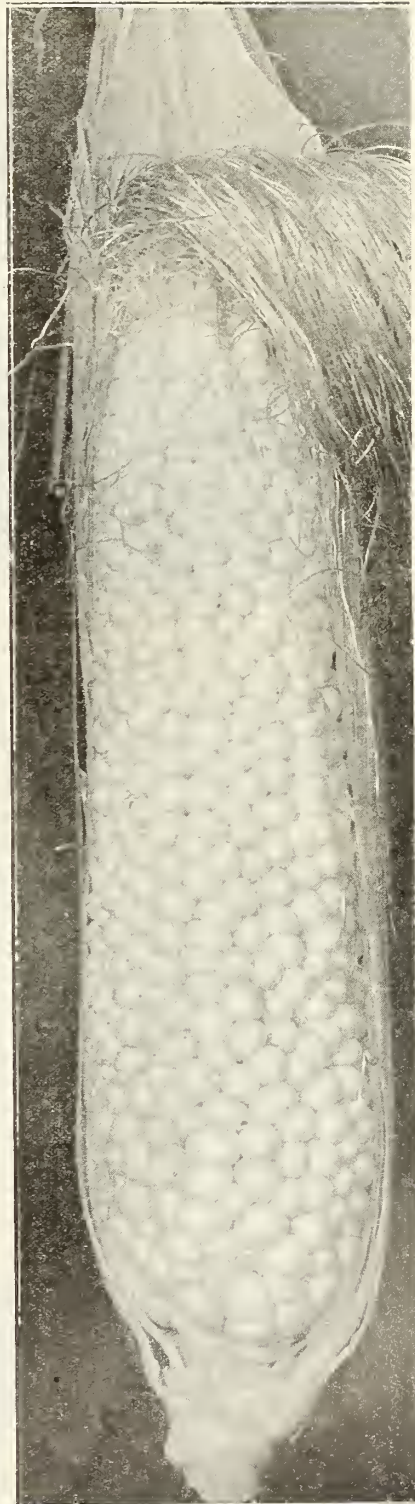
Country Gentlemen

A delicious sweet corn. The ears are somewhat smaller and less showy than the coarser varieties, but for private family use, where quality is preferred to size, it is excelled only by the Golden Bantam. The cob is very small, giving great depth to the kernels. The great merit of "Country Gentleman" is its fine quality. It matures in ten weeks. (Pkt. 10c) (lb. 40c) prepaid; (10 lbs. \$3.00) f. o. b. here.

Stowell's Evergreen

If planted at the same time with earlier varieties and at intervals of two weeks until July 1st, it will keep the table supplied until November. It is hardy and productive, very tender and sugary, remaining a long time in a fresh condition suitable for cooking. (Pkt. 10c) (½ lb. 20c) (lb. 35c) prepaid; (10 lbs. \$2.75) f. o. b. here.

Black Mexican and very productive. (Pkt. 10c) (lb. 40c) prepaid; (10 lbs. \$3.00) f. o. b. here.



Country Gentleman

One of the best sweet corns for this section. Deliciously sweet and tender (Pkt. 10c) (lb. 40c) prepaid; (10 lbs. \$3.00) f. o. b. here.

Oregon Evergreen

Pop Corn

All pop and no shell

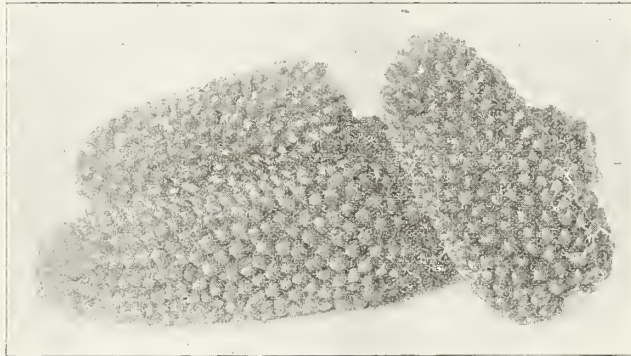
Burbank's Sorghum Pop A new pop corn that promises to supplant the old well known varieties because of its superior popping qualities and productiveness.

Mr. Peck of Bell P. O. is authority for the above statement. Try it. (Pkt. 15c) (¼ lb. 25c).

Rice Sharp pointed grain is preferred by vendors, but is not profitable to grow here at usual prices because of the devastations of the worm. Per (Pkt. 10c) (lb. 35c) postpaid; (10 lbs. \$2.50) f. o. b. here.

Pearl This is the variety so extensively and profitably grown locally. It yields enormously and at the present price is very profitable. (Pkt. 10c) (lb. 35c) postpaid; (10 lbs. \$2.50) f. o. b. here.

Yellow Large smooth grains of Golden Yellow color. It pops large, has excellent flavor and is the most profitable to grow, but does not sell as readily as the Pearl. (Pkt. 10c) (lb. 35c) postpaid; (10 lbs. \$2.50) f. o. b. here.



Doll Pop Corn

Doll Pop Corn The best of all for the home garden. The commercial pop corn roaster prefers it, saying it is the best of all, but he cannot get enough of it because the comparative yield is small, therefore, not profitable to grow in large acreage. But for the home it very much excels other varieties. (Pkt. 10c) (¼ lb. 20c) (lb. 50c).

A WORD ABOUT SHIPPING

An independent grower may occasionally make a very advantageous sale to a chance eastern buyer and conclude that he would be justified in making a business of shipping individually or in the language of the trade, "Be an independent shipper." When that idea comes to you just sit down a minute and figure for yourself. To build up and to hold a regular trade you must grow crops in quantities of car lots and grow them at the right time. You must be your own bookkeeper, and packer; assume all the risk of loss in transit, the risk of collection unless you receive cash in advance which is not the usual way.

Would it not be a saving of nerves, energy and less chance to lose if the grower with twenty to one hundred acres would grow seasonable produce and have something for the shipper nearly every month in the year, he would be relieved of much tedious detail and risk of loss, because he would need only to deliver his entire crop when ready at the nearest packing house receive settlement and go about his business without any care other than his growing crops. These crops must be governed by the soil and climatic conditions.

But throughout the southwest and in California particularly there may be some vegetable crop ready for the market each month of the year.

Have ready for the shipper some crop in November, December, January, February, March, April and May.

Have something for the canner—spinach and beets in March and April; tomatoes in July, August, September and October; pumpkins in November and December.

If in doubt what to plant see us about it.

See the list of books offered on Page 16.

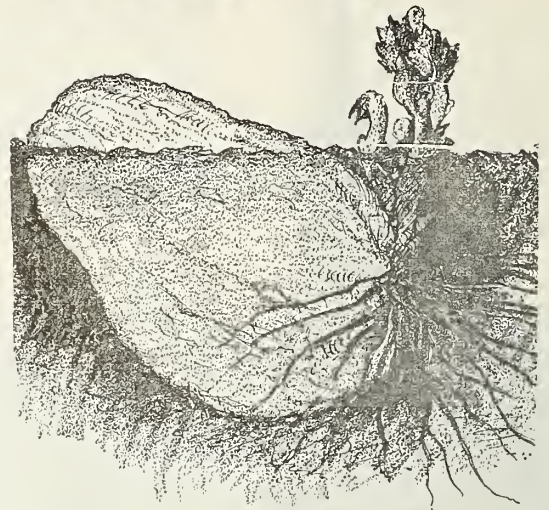
620 SO. SPRING ST.

It is our aim that our store at 620 So. Spring St. will be so conducted that every customer will receive such courteous treatment that it will be a pleasure to return. We wish to have on hand during each season all seeds and plants needed to make the home garden complete.

All clerks are trained to give correct advice on matters pertaining to gardening, but we request that you read this catalog carefully on all subjects in which you are interested, you will find much helpful information.

Take advantage of our call counter. See page 3.

A & M Chayote



Chayote as It Should Be Planted

The Chayote is no longer a novelty. It has now become an article of commerce. It may be found on sale at every grocery store throughout the season, which lasts from October until March.

The vine is a rampant grower. The first year from seed it will grow twenty to thirty feet. Destroyed to the ground by frost, it soon sends out new growth, and during the second season will extend vines forty or fifty feet in every direction. During September it starts blooming, having a small white insignificant flower. Within four weeks the fruit is large enough for the table. One vine in two years if properly trellised will produce more than one thousand fruit.

Cultural Directions One fruit envelopes one seed, which sprouts from the large end. Plant where you intend it shall grow. Cover only the large end, leaving the small end exposed. (See picture.) Or let the fruit lie around until it has well sprouted, and then plant the seed, leaving the sprout well above ground. Water freely and do not be alarmed if frost should destroy it. A new shoot will soon appear. Give it abundance of water throughout the hot summer season.

Because of many complaints of failure to get them started we offer them already rooted. Rooted vines 30c each or 2 for 50c postpaid. One Chayote not rooted, 20c, or 2 for 35c postpaid. At the counter, rooted, 15c; not rooted, 10c.

RECEIPTS

Parboil, chop and casserole with tomato, onion and green peppers.

Fry as egg plant. Prepare as summer squash.

Use small ones, without peeling, boil until tender, cut in half, put a small lump of butter, a little sugar, salt and pepper on each one. Put in oven a few minutes.

For larger ones. Peel and cut into cubes and boil; when done, drain, add butter and seasoning and fry in pan. Let simmer until butter burns. Just before serving put tablespoonful of vinegar on them.

Parboil young ones and serve as salad with mayonnaise dressing or with boiled dinner as turnips.

Spanish Style: Can be cooked Spanish with tomatoes and chili or bake in roasting pan with meat.

Breaded: Also to boil until tender, slice, dip in egg and cracker crumbs and fry it.

Chayote Pudding—Boil the Chayote, mash, and rub through a sieve. To one and one-half cupfuls add one-third cupful sugar, one well beaten egg, two powdered soda crackers, one teaspoonful ground ginger, one teaspoonful of lemon extract, and one tablespoonful of butter. Mix well, turn into a greased pan and bake. This is delicious, try it.

Chayotes cooked with sliced lemon, and sugar to sweeten well, make a fine "apple" sauce, one can scarcely tell the difference.

Mrs. A. de la Mix, Nalachu, Kauai, T. H., writes that the Chayote was grown in Portugal from time immemorial and its Portuguese name is Pipinola. She also advises that when peeling, hold the hands under water as the liquid stains and draws the skin, but does no lasting harm.

COMPLIMENTARY

JOHN J. PAVAO, Hawaii

I have had excellent results with your seeds. Two years ago, during the Honolulu Star Bulletin Garden Contest, I won the first prize for East Hawaii. Last year the Star Bulletin continued the contest and again I took the first prize for my district, largely with your seeds. The contest is on again this year and I am confident of taking the first prize again.

A & M Cucumbers

FOR EARLY CUCUMBERS USE WAX PAPER CAPS—SEE PAGE 33.

Market:—The hot-bed cucumber is here to stay because it is profitable. There is usually an over-production in mid-summer when the price drops to 15c per lug which should never sell for less than 30c to be profitable. Probably more money is realized from Cucumbers planted September 1st than from the main crop planted earlier. Since the shipper has taken hold of the hot-bed cucumber the business has grown enormously.



Klondike Cucumber

Culture for hot-bed—Make the frame 8½ feet wide and as long as is desired, using 12 in. boards. Select a place with good loamy soil on a sunny slope. Mix the soil almost half and half with horse manure. About February 1st sow liberally with seed, in hills three feet apart each way. Stretch wire over the frame across and lengthwise. Sew muslin in widths and lengths to cover frame. Arrange to roll the muslin on a stick as a curtain. Cover each evening, and open each day.

Field culture—Plant from March to October in hills 4 to 6 feet each way, 8 to 10 seeds to a hill. Cover an inch deep. When danger of insects is past, thin out the plants, leaving 5 or 6 of the strongest in each hill. It is ready for the table in six weeks from planting seed. One ounce of seed will plant 50 hills; two pounds to the acre.

Klondike This cucumber has steadily grown into favor since we first offered it six years ago. It is the one variety that made carload shipments possible because it is firm, dark green color, and stays green until consumed; turns neither white nor yellow with age, but stays green. It is a desirable size, just 7 to 8 inches long, symmetrical in shape, and especially crisp and palatable. It is an excellent variety for pickling when young, as well as desirable for the market. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Davis Perfection This is the ideal cucumber. Long slender, dark green, tender and crisp. It is the best all around cucumber yet offered for the family garden, the market garden and the hot house. Do not hesitate to plant this variety, whether you plant a dozen hills or a larger acreage. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.

Arlington White Spine This has been a favorite for many years; it is one of the best sorts for early out-door forcing, and always a good table variety. It is very prolific, and excellent for pickling when young. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Improved Long Green Dark green, firm and crisp; ten to twelve inches long, a favorite with home and market gardeners. Hotel trade like a long cucumber for slicing; this is ideal for such purpose. It is very prolific, and none better for pickling. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.

Japanese Climbing Cucumber This variety should be grown more extensively; it is equal to others in quality and can be grown more economically in a small garden by planting near a fence or trellis of any kind, and climbs by tendrils as a grape vine. Whether space is a factor or not, we recommend it. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.

Lemon Cucumber At last after years of advertising and effort to educate the home-gardener to grow the Lemon Cucumber in preference to the common long green type, we can now say that at least half the people are awake to the superiority of this delicious salad, and the other half will soon regret not having tried it earlier. Every one who has tried it is unanimous in its praise and would not think of omitting it from the spring garden. It is the color of a lemon when ready to use, and similar in shape, being less pointed at the ends.

Plant four or five hills for a family garden. Cultivate same as other cucumbers, water freely and you will have four times as many cucumbers as any other variety will produce.

There is nothing but praise for the Lemon Cucumber. It may now be found at almost any vegetable stand, and no home garden should be without it. (Pkt. 10c) (oz. 25c) (¼ lb. 85c) (lb. \$2.50) postpaid.

When you have tasted the Lemon Cucumber write us about it that others may know how good it is.

Our Everbearing Cucumber This variety is entirely distinct from all others on account of its close, bushy growth and everbearing character as shown in our illustration. The first cucumbers are ready very early and the vines continue to flower and produce fruit continually until late in the season, whether the ripe cucumbers are picked off or not, differing in this respect from all other varieties of cucumbers in cultivation. A single vine will show at the same time cucumbers in every stage of growth, the smaller ones being perfect in shape, of a fine green color, just the right size for pickling. As they grow larger they are entirely satisfactory as a slicing cucumber.

We recommend this to be planted in home gardens at all times, but especially in September. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Chicago Pickling This is the variety that is being shipped out of Orange County to the Los Angeles pickling factories. Thirty-five carloads were shipped in, and possibly as many more came by auto truck. Our seed has given these growers satisfactory results for years.

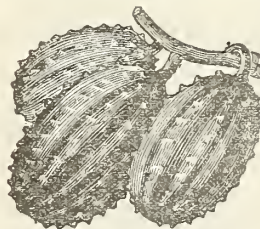
This variety is chosen because of its delicious quality and its shape, being one inch thick and three inches long when at pickling size. It is enormously prolific, bearing in clusters. We can recommend it for the home garden, but not for the market gardener, because it turns yellow soon after being taken from the vine. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Italian Cucumber Always the prize-winner. Almost every county represented at the State Fair in Sacramento had one or more jars of this Italian Cucumber. It is excellent for the table when quite young, and under ten inches long. It frequently grows to thirty inches in length. Sold only in packets, 10c each.

A Word About Cucumbers

Planted from September 1st to 15th, in a sheltered place, will produce delicious cucumbers all through December and late into January. This has been done frequently, but so much depends upon the changeable climatic conditions each season that there is always a risk of failure, but it is worth a trial because the expense is small compared with the profit if you succeed. Six hundred dollars from one acre of cucumbers during the month of December is easily possible.

To prolong the vitality of your vines, pick all of market-size every other day, and do not tread upon the vines when picking. To grow prize cucumbers, mix a handful of fertilizer with the soil about the hill when planting, and more as the vine grows.



SMALL GHERKIN.

Gherkin This cucumber is the most delicious of all the cucumber family when properly pickled. It should be more extensively grown. Planted where it may climb on a trellis, one vine will cover a section of fence eight feet high and twelve feet wide, producing possibly a thousand or more of the delicious and oddly shaped gherkins. It should be planted to shade a window or back porch. (Pkt. 10c) (¼ lb. 90c).

COMPLIMENTARY

If there is any chance of my getting plants from your company it would please me very much, because I consider the Aggeler & Musser Seed Co. No. 1 in every way, shape and form.

H. E. MINSEL, Cabazon.

A & M CHICORY



WITLOOF CHICORY.

The roots, dug in the fall, dried, cut in thin slices, and ground, are used largely as a substitute for coffee. Seed should be sown quite thinly in shallow drills early in the spring. When well started, thin out to stand two or three inches apart in the row and give good cultivation all summer. (Pkt. 10c) (oz. 50c) (¼ lb. \$1.65) (lb. \$5.00) postpaid.

Witloof Chicory

Sow the seed in deeply prepared ground during June, July and August. Thin out to eight inches apart in rows twelve inches apart. In the fall take up the roots and store them in a manner that will preserve them in good shape for a month or longer. This can be done by burying them in sand. In December make trenches ten inches deep and twelve or fifteen

inches wide, and loosen the soil for ten or twelve inches deeper. Set the roots three inches apart in rows six inches apart, within the trench, so the tops of the roots are eight inches below the top of the trench. Then fill with sand, water thoroughly and cover with manure. In two to four weeks tender heads will form and be ready to use as a salad with French dressing.

This is a most delicious salad, and many Eastern growers are making a specialty of it, selling to hotels at fancy prices. We suggest it to our many mushroom growers, believing it will go nicely hand-in-hand with the growing and marketing of mushrooms. (Pkt. 10c) (oz. 50c) (¼ lb. \$1.65) (lb. \$5.00) postpaid.

A & M COLLARDS

The Collard is an old-time favorite, adapted to all parts of the South, and as a producer of "greens" for boiling in winter and spring it has no equal. It will pay you to have a collard patch just to feed the chickens.

Southern Georgia This variety is the old-time favorite. Stands all sorts of adverse conditions without injury. Is very hardy. In many places where the soil is too poor to grow cabbage, the collard grows easily and makes a good substitute for cabbage. (Pkt. 5c) (oz. 20c) (¼ lb. 60c) (lb. \$2.00) postpaid.

A & M CRESS

Pepper Grass Sow curled or pepper grass thickly, in shallow drills, every two or three weeks. It should be cut often, and will continue to grow. It is used not only for salad, but on the breakfast table and for garnishing. Used with lettuce its pungency adds an agreeable flavor. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) postpaid.

True Water Cress Should be sown in damp soil or if a stream of water can be utilized, it would be much better. It will also thrive well in damp cold frames. Rightly managed, its culture is very profitable. (Pkt. 10c) (oz. 60c) (¼ lb. \$2.00) postpaid.

A & M CORN SALAD

Culture—Sow any time from Oct. 1st until February. Plant and cultivate the same as lettuce. It is hardy in this climate. It is used for garnishing in the same manner as parsley or cress. (Pkt. 10c) (oz. 40c) (¼ lb. \$1.35) postpaid.

Chervil Curled Chervil. Seed should be sown only during the cooler months in rows 15 to 18 inches apart and thin to 4 to 6 inches apart in the rows in good garden soil. Chervil is used for garnishing and flavoring. (Pkt. 10c) (oz. 40c) (¼ lb. \$1.35) postpaid.

A & M DANDELIONS

Sow early in spring, in very warm, rich soil, in drills eighteen inches apart; thin to five inches apart and cultivate well; they will be fit for cutting the next spring. When grown for the roots, sow in September and cultivate well during the fall and the following summer; the roots will be fit to dig in October.

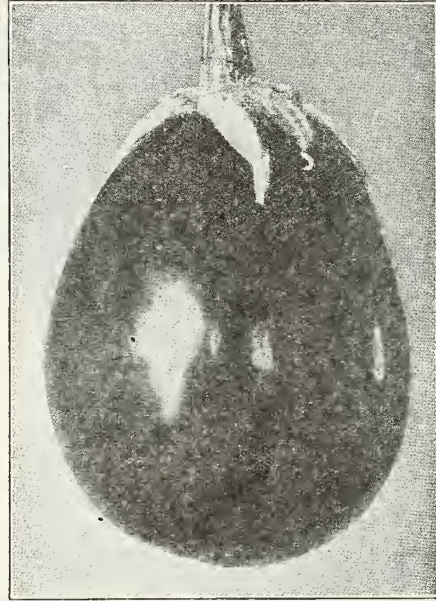
Improved Thick Leaved Unsurpassed, in thickness of leaf and deep green color. It is compact and forms an upright regular tuft at the center. This cabbageing sort is much superior to the common or uncultivated dandelion. (Pkt. 10c) (oz. \$1.50).

MR. FORD, San Francisco, California

Your catalog arrived on Saturday and I assure you we will make good use of it. The general comment on your this year's catalog is that it is the finest handbook of general information on agriculture and horticulture ever put out by a seed house.

A & M Egg Plant

Market—The sale of Egg Plant does not compare favorably with other produce, and the consumption is not large. It is owing to the productiveness of the Egg Plant which makes it at all profitable during the season of abundance. A small acreage yields enormously, but it is the very early Egg Plant which makes a profit, such as \$1000.00 per acre. May and June are considered early.



New York Improved Spineless Egg Plant

following May. Egg Plants require four to six months to mature. One-fourth pound of seed is sufficient to plant an acre.

New York Improved This variety has superseded all others, both for market and home use. The large size and high quality of its fruit and its extreme productiveness make it the most profitable for the market gardener. It is spineless, which is a great advantage in shipping. (Pkt. 10c) (oz. 75c) (¼ lb. \$2.50) (lb. \$7.50) postpaid.

The Tree Egg Plant



Tree Egg Plant

formly over the entire surface. It is entirely free from spines. It is popular because it is a money-maker. (Pkt. 10c) (oz. 75c) (¼ lb. \$2.50) (lb. \$7.50) postpaid.

Culture

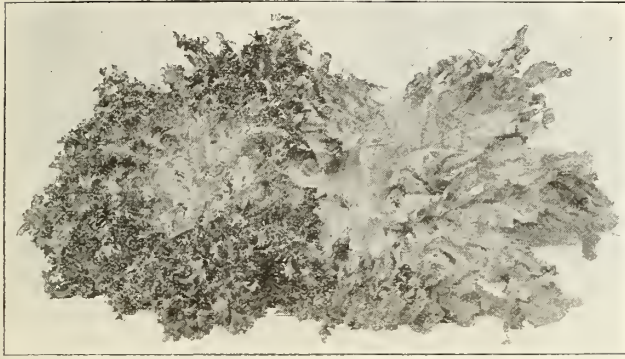
—The seed should be sown in a hot-bed during December or January; it is slow to germinate and requires warm and even temperature. The plants should be ready to set out by April 1st, and may be planted as late as August 1st. Plant eighteen inches apart. Keep well watered, and pick closely as soon as large enough. In very warm protected spots they will survive the winter. Even if the foliage is destroyed sprouts may appear the following spring from the stem beneath the soil and mature marketable fruit the

This variety is of medium size and extremely good shape, being particularly adapted to slicing, as there is no waste of material. It resists drought and bad weather to a wonderful degree, partly on account of its strong, upright growth. It bears its fruit sometimes one or two feet above the ground, thus escaping liability to rot. It is very satisfactory for the home garden. (Pkt. 10c) (oz. 75c) (¼ lb. \$2.50) (½ lb. \$4.00) (lb. \$7.50) postpaid.

Black Beauty

Is preferred by growers for the early market because it matures marketable sized fruit earlier than any other variety, and because the fruit is dark colored, when quite young and uni-

A & M ENDIVE



Golden Heart

Batavian

Culture—Same as for lettuce. Seed may be sown any time during the year. When plants are well started, thin out to ten inches apart, or they may be transplanted. When plants have reached a good size, gather the leaves closely together and tie loosely in an upright bunch. This blanches the inner leaves in about ten days and adds to the crispness as a salad, as it renders the flavor mild and delicate. One ounce will sow 400 feet of row.

This plant furnishes an attractive and appetizing salad for the fall and winter months, or by repeated sowings a supply may be had nearly all the year round.

Green Curled Golden Heart Leaves are finely cut or lacinated, giving the plants a rich, mossy appearance, which is greatly enhanced when the centers are nicely blanched.

This is the variety generally preferred because it blanches to a beautiful golden yellow. (Pkt. 5c) (oz. 15c) (¼ lb. 45c) (lb. \$1.25) postpaid.

White Curled This beautiful variety does not need blanching to prepare it for use, the midribs being naturally of a pale golden yellow, the finely cut and curled leaves are almost white. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.

Batavian or Escarol Forms large heads of broad, thick leaves, which can be blanched for a salad or it will make excellent cooked greens, as well as being useful to flavor soups, stews, etc. (Pkt. 5c) (oz. 15c) (¼ lb. 45c) (lb. \$1.25) postpaid.

A & M HERBS

Herbs in general, delight in a rich, mellow soil. Sow the seed any time throughout the year, in shallow drills one foot apart; cover lightly with fine soil, and when up a few inches, thin out to proper distances apart, or transplant into prepared beds. Care should be taken to harvest properly; do this on a dry day, just before they come into full blossom. Dry quickly in the shade, pack closely in bottles or dry boxes to exclude the air; this will insure their being preserved in good condition for future use. Varieties in the list marked * are perennials.

Plant Dill Every year there is such a demand for green dill that the supply is short of the demand.

Plant in any quantity, from ten feet square to one acre, but not more. Make several plantings to have it drag along, and sell what you can of the green dill and let the balance mature for seed. There is a good demand for the seed at about 20c per lb.

Leading Varieties

Pkt.	Pkt.
Anise .....10c	*Peppermint .....10c
Balm .....10c	*Rosemary .....10c
Borage .....10c	*Sage .....10c
Burnet .....10c	Saffron .....10c
*Caraway, lb. 50c	Sorrel .....10c
*Catnip or Catmint .....10c	Summer Savory .....10c
Chervil .....10c	Sweet Marjoram .....10c
Coriander, lb. 50c	Sweet Basil .....10c
Dandelion .....10c	*Thyme .....10c
Dill .....10c	*Winter Savory .....10c
*Fennel, Sweet .....10c	*Wormwood .....10c
*Lavender, Sweet .....10c	

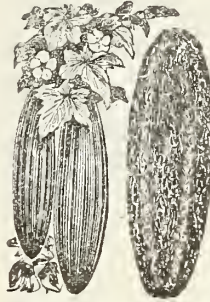
Devote a small plot in your garden to the growing of herbs. They add to the taste of things what daintiness adds to the looks of things, and many of them may be enjoyed all the year round.

There is an increasing demand for Basil, Dill and Thyme for use in canning and pickling. It may prove profitable to contract to grow these herbs for that purpose.

Belladonna We have the seed for sale fresh from the grower. (Pkt. 15c) (oz. \$1.35) (¼ lb. \$4.00).

The growing of Herbs promises a profit to the grower who will go about it intelligently. We would suggest that you write United States Department of Agriculture, Bureau of Plant Industry, Washington, D. C., and ask for Bulletin No. 372, entitled, "Commercial Production of Thymol from Horsemint," by S. C. Hood. Also, same address, ask for Bulletin No. 734, entitled "Production of Drug-Plant Crops in the United States," by W. W. Stockberger.

A & M Gourds



Dish Rag Gourd

Culture—Gourds are tender annuals, of trailing or climbing habit. The seed should not be planted until the ground is warm. Plant in hills and cultivate as cucumbers. Leave only three or four plants in a hill, and allow the vines to ramble or train over a trellis and for shading windows.

Dish Rag Gourd The peculiar fibre within the gourd gives it its name. The fruit grows about one foot long. The interior fibre is serviceable for a variety of household purposes, being used as a dish cloth, or sponge. The fibre is tough, elastic and durable. (Pkt. 10c).

Mock Orange A good old sort, the gourd often findings its way into the family sewing basket. A beautiful and rapid climber, quickly covering trellises. (Pkt. 10c).

Dipper Bowl with long handle. (Pkt. 10c).

Bottle Bowl with short handle. (Pkt. 10c).

Pipe Often made into pipe for smoking tobacco. (Pkt. 10).

Nest Egg (Pkt. 10c).

Ornamental Small, odd shapes and colors. (Pkt. 10).

Mixed Gourds (Pkt. 10c).

AN EDIBLE GOURD

Lately advertised as New Guinea Bean. Has been a common table vegetable in China from time immemorial.

It remained for some cheerful idiot to advertise "A Gigantic New Guinea Butter Bean." "One bean suffices for several meals." "Sliced like bread, one piece is a portion for each member of the family," and such talk.

All of us have curiosities and many persons have reported to us how "Good is this New Guinea Bean." We tried it and sure enough we found it even better than the most delicious marrow.

Recipe: Take fresh from the vine a young gourd about sixteen inches long and three inches in diameter or smaller, while the fuzzy growth is yet on. Cut into cubes about ¾ inch, bring to a boil, pour off the water once or twice. Season well with pepper and salt, add butter. You will be surprised how good it is.



Kohl Rabi

A & M Kohl Rabi

Culture—Seed may be sown every month in the year. Drill on ridges same as beets. (See page ?) Thin to three inches apart. An ounce of seed will produce 2,000 plants.

Early White Vienna

The earliest sort, very tender, excellent for table use. (Pkt. 5c) (oz. 30c) (¼ lb. \$1.00) (lb. \$3.00) postpaid.

Early Purple Vienna

Similar to above, but has flesh of purple color. (Pkt. 5c) (oz. 30c) (¼ lb. \$1.00) (lb. \$3.00) postpaid.

COMPLIMENTARY

MRS. JNO. D. McCULLAH, California

There is a wealth of knowledge for gardeners in your catalog and we are finding it all extremely helpful to us as we are quite new hands in the garden, though find it a most interesting, enjoyable and also profitable work even for just our home use.

MRS. M. A. THOMAS, California

Your catalog is the very best one of several received this season. It has so much good information in it. I wish if you haven't already done so you would send one to a friend of mine.

W. SAM CLARK, California

I am in receipt of your splendid catalog for 1919, for which I thank you. Will probably require some of your products for this season's planting. We have had good results from your goods in seasons past.

A & M KALE



Tall Scotch Kale

Culture—Seed should be sown thinly, in drills, about the middle of June for the tall sorts; transplant the young plants twelve inches apart in rows three feet apart. Later in the season the dwarf sorts may be sown rather thickly in drills to furnish small heads to be cooked like spinach. One ounce to 100 feet of drill.

Tall Scotch This makes a beautiful plant, about two-and-a-half feet tall. (Pkt. 5c) (oz. 25c) (¼ lb. 85c) (lb. \$2.50) postpaid.

Jersey Kale A tall variety with smooth leaves. Especially used for poultry greens. (Pkt. 5c) (oz. 15) (¼ lb. 50c) (lb. \$1.50) postpaid.

Siberian Kale We received a complaint from a grower who had ordered Tall Jersey Kale. Investigation revealed the fact that he received the Siberian Kale. This proved to be so vastly superior to other varieties that poultrymen prefer it. It is not only a more rampant grower but more tender and succulent. Indeed it surpasses all other varieties. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

MARKETING THE SMALL CROP AT HOME

The Wayside Market

About four years ago, in this catalog we advised the small grower to market his crop by the wayside, owing to the advent of the auto and our good roads. The experiment has proven so successful that the small producer need no longer divide with the middle man.

Many small growers are now enjoying a prosperity never before realized and with less arduous labor and unpleasant bargaining. This is as it should be.

But the infant industry has grown to such proportions that many places can no longer be classes as producers' markets. They are importers and retailers pure and simple. They have become the middle man.

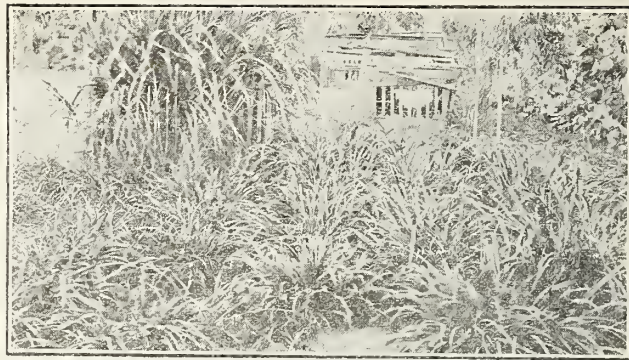
Why not? Their place is a convenient outlet to small growers not so favorably located.



Wayside Market

G. T. CHANNING, California

The helpful spirit permeating your catalog has been very encouraging to me, especially as I am placed where it is hard to get advice from neighbors.



Napier Grass cut ever ten days from June until November, to feed the Chickens and Goats.

How to Make a Living on One Acre

A small garden all the year.

A fence covered with berries.

A flock of fancy poultry.

Half a dozen thoroughbred Goats.

A small patch of Napier to feed them and a shed covered with Chayotte vines to house them.

Trees to mature fruit nearly every month in the year.

Flowering hulse, rhubarb, herbs, kale, something here, there and everywhere all about the place.

Consume what you need and sell the surplus. No space is idle, nothing is wasted.

Mrs. N. M. Jackson, South Los Angeles, has such an acre, is making a living and getting ahead.

COMPLIMENTARY

VIRGINIA LOVENGUTH, California

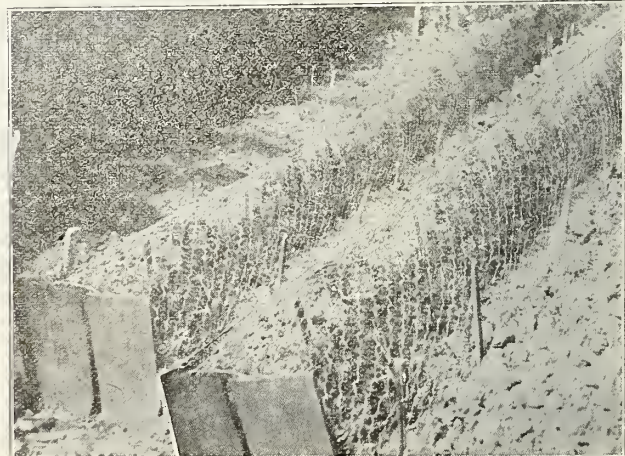
I have the home garden under my care and as I am a sort of amateur in the work your catalog is just what I want and need. It is the best thing I have ever seen in the way of a seed catalog. Would you please send a copy of it to my brother?

MARY LAMBUTH, California

Your seeds have always been so very satisfactory, that I have told my friends, and also told them that I would ask you to send them a catalog. Please send one to the following address. Can you send me two extra ones, as there are other parties I want to interest. I do not like to lend my catalog, for fear it will not return, and there are so many useful items in it.

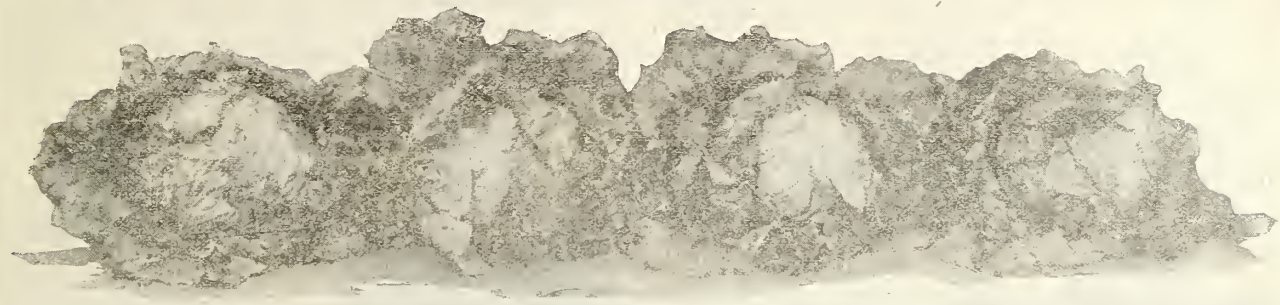
Safe from Birds

A valuable suggestion to the small gardener.



One inch mesh wire netting, two feet wide arched over the row of lettuce is a sure protection against birds, chickens or other animals about the place. It is economical because it may be used repeatedly for many years.

A & M Lettuce



Los Angeles Market or New York Special

How to Raise Lettuce In Bulletin No. 160 entitled "Lettuce Growing in California," by Prof. Stanley S. Rogers, published by the University of California in 1917, the author predicted great development of the lettuce industry in California because of the growing demand for California grown lettuce. His prophecy has been fulfilled beyond his wildest imagination. At that time approximately 2000 acres were planted to lettuce for shipping. This fall of 1919 no less than 8000 acres have been planted in Imperial Valley alone, and as much again elsewhere in Southern California. Within the same time the demand for our strain of seed has increased ten-fold. Credit must be given our dependable seed for building up this enormous shipping business. One shipper alone used 2000 pounds of seed. One individual grower planted 500 pounds. In normal times the grower usually received 40 cents per crate for first class lettuce, now rarely less than \$1.00 and often \$3.00. One crate contains from four to six dozen heads.

There are 30,000 plants per acre. It is reasonable to expect 24,000 marketable heads or 2000 dozen, about 400 crates at \$1.00 per crate, or \$400 per acre. With a market for all of it at a price to the eastern consumer of 20 to 25 cents a head it is not surprising that the lettuce industry has grown to enormous proportions.

CULTURE

Lettuce is very exacting as to soil requirements. It is best suited to a rich, light loam, and should never be planted on soils of poor quality. Irrigation is necessary throughout the entire growing period, except during the rainy season, but the crop is easily ruined by an excess of water. The crop stands cold better than heat, and in many of the interior valleys of the state it is impossible to raise lettuce of good quality during the summer.

At the time of planting, the soil should be in the finest possible condition. Many growers apply from 15 to 25 tons of manure per acre. The plants should be grown on ridges, 12 to 18 inches wide, four to six inches high, and ten to 15 inches apart. The water should be run between the ridges and not flow over the tops, and should never be allowed to cover the plants. There should always be an adequate amount of moisture in the soil from the time the plants have commenced to head until they have matured. The hoeings necessary on raised beds will vary from one to five. The earth around the plants should not be allowed to harden.

In the interior valleys and especially in Central California, plants set in the field during September should mature during December. In warm weather the lettuce should be cut early in the morning and never when the heads are wet, as in that condition they will heat and quickly rot. The field is gone over from two to five times during the cutting season.

At the university farm vegetable garden, 80 different varieties of lettuce were grown during the past season, and most of them did well. However, now most in favor in California are the Los Angeles or New York Market, which is best adapted for long distance shipments and which withstands cold weather injury but is not adapted to maturing during hot weather.

The chief difficulties the lettuce grower meet are lack of a satisfactory stand, due to unfavorable weather, or to over-irrigation or under-irrigation; or diseases, such as "stem rot," a fungus disease controllable by good drainage, and "sunburn," a blackening of the edges of the leaves inside the heads, caused by a period of excessive hot weather from the time the plants are half grown until they have commenced to head, and preventable by planting in the fall or early spring and by frequent irrigation during the spring if the weather is very hot and dry. Give preference to sandy soil in winter and heavy soil in summer.

Why Is Imperial Lettuce Larger?

Probably because they allow it to mature to good size. Los Angeles growers are too impatient to fill orders, and this impatience is costing them one-fourth of their crop. This temptation to sell before the crops mature too often robs the grower of his profit. Remember almost all crops nearly double their tonnage the last two weeks of growth.

NOTICE! NOTICE! NOTICE!

Do not fail to read all foot-notes at the bottom of the page; they are there to fill up space, but they are also full of information, valuable to you. Keep this catalog, you will need it all the year.

Los Angeles Market or New York Special

One of Aggeler & Musser Seed Co.'s Big Money-Makers. This is one of the many vegetables introduced by us which have become of great value to the growers of Southern California. Like the Pearl Cauliflower, Winnigstadt Cabbage, and Golden Self Blanching Celery, thousands of carloads of this lettuce are being shipped from Southern California. This is surprising when only a few years ago we were requested by one shipper to get a lettuce that would stand shipping better than the smooth leaved varieties. We experimented with a curled variety and developed this hard headed type that weighs more than two pounds per head. We shipped the first crate to a friend near Philadelphia, Pa. It arrived in perfect condition and kept good on ice for a period of three weeks, until consumed. We then introduced this as the Los Angeles Market Lettuce. It at once created a sensation with the growers, and later with the shippers, when they learned it would carry to the far east as well as cabbage. It is now shipped more extensively than any other vegetable.

This Los Angeles Market lettuce was later offered by other seedsmen in other parts under other names, such as **Wonderful** and **New York**, but as it was introduced from here and grows to perfection around Los Angeles during the winter months, the name **Los Angeles Lettuce** is aptly applied to it by dealers and consumers everywhere in the United States. (Pkt. 10c) (oz. 75c) (¼ lb. \$2.50) (lb. \$7.50) postpaid.

Mr. K. Samuels, of Lompoc, writes:

"Would say a word for Los Angeles Market Lettuce. We are supplying some of the stores here, and the heads are weighing from one to two and one-half pounds to the head, and the quality is the very finest."

Iceberg This is next to Los Angeles Market as the leading variety for the Southwest during the summer months. Of course it is better during the winter months, but not so solid as the Los Angeles Market, which is strictly a winter variety, while the Iceberg is a good all-season lettuce, and hundreds of carloads of Iceberg are being shipped when the other is not available. Iceberg lettuce planted later than March 1st should be grown on dark, heavy soil, because if grown on light, sandy soil the heat of the sun reflected from the sand on the under side of the leaves causes them to burn almost to the heart.

The light green, curled, red-tinged leaves of the Iceberg form heads as large as the Los Angeles Market, but not so solid, but it is as tender and crisp, and is of excellent flavor. (Pkt. 5c) (oz. 25c) (¼ lb. 85c) (lb. \$2.50) postpaid.



How to Grow Lettuce

LETTUCE—Continued

Big Boston Very large, smooth-leaved, solid-heading variety grown more extensively throughout the east and south than any other. It is congenial to all climates, and is a good shipper. In flavor it probably excels all other smooth-leaved varieties. An excellent all year round lettuce. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Hansen Without exception this is the best variety for late spring and mid-summer crop. Prof. F. W. Mally, Farm Demonstrator of Webb County, Texas, discovered Hansen Lettuce to be resistant to both heat and disease and particularly resistant to eel worm which is often prevalent where least expected. Hansen Lettuce is similar to the Iceberg Lettuce, except that it has not the tinge of red. We recommend it for the home garden. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.



Paris White Cos

Paris White Cos

This might well be spoken of as the "Aristocrat" for the reason it is used almost exclusively at aristocratic clubs and hotels for salads, because it is crisp and has a delicious nutty flavor.

Gardeners would profit to give more attention to this variety. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50).

May King Very similar to Big Boston, without the tinge of red. It is a good shipper and of excellent flavor. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Way-a-head A large solid-headed smooth-leaved type. All green, none of the red tinge that is so much objected to on the part of the shipper and the retailer because the red tinge suggests staleness which the buyer would avoid. When you plant the Way-a-Head you will have the best smooth-leaved variety on the market. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50).

Marblehead A lettuce of great favor in the East because of its delightful flavor, and because it there grows to perfection from early spring until late fall. For the Southwest it is our best summer lettuce, but like all other varieties with us, it attains its perfection during our winter months. Plant all the year round. (Pkt. 5c) (oz. 15c) (¼ lb. 60c) (lb. \$1.75) postpaid.

Early Curled Simpson This is a very popular variety as a loose leaf lettuce. The leaves are large, thin, very tender and of very good quality. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

California Cream Butter This lettuce is similar to the Big Boston. Is a good shipping variety. One gardener sold from one-half acre of this lettuce nearly three hundred dollars' worth. It is of good flavor and beautiful in appearance. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Tennis Ball Similar to the California Cream Butter, except in size and without the tinge of red. It forms a solid head and is best for early spring. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

L. E. RHODES, Texas

I certainly think you put out a fine catalog. I feel as though I have been missing something by not sending for it sooner.

W. E. BUTTERFIELD, California

Have been planting your seeds for several years and have found them quite reliable. Have studied your catalog and find it very interesting.

A & M Mushrooms

One of the most profitable crops for the outlay that can be grown. The market is sure, because the supply never equals the demand. Mushrooms can be grown in any dark room or cellar where the temperature can be kept at 50 to 75 degrees. The main conditions in mushroom growing are proper and uniform temperature and very rich soil. One pound of spawn is sufficient for a bed 2x8 feet. We have the very best spawn obtainable. If interested, write for circular.

Pure Culture Spawn—Brandywine—Put up in bricks. Per brick, 30c; by mail, 40c.

Address University of California, College of Agriculture, Berkeley, Cal. Ask for Circular No. 84, entitled, Mushrooms and Toadstools.

Many inquiries come to us from would-be growers of mushrooms. Our reply is not always encouraging because many growers have marvelous success for a time but we know of not one permanently prosperous grower. There seems to be an element of uncertainty. The green-horn often succeeds when the professional grower fails.

A & M LECK

A & M Leek We believe in having the best of everything. With this idea always before us, we have secured this fancy strain of leek. It is large, white, tender and mild—the best in the world. Its mild, delicate flavor makes a delightful addition to lettuce salad. (Pkt. 5c) (oz. 35c) (¼ lb. \$1.15) (lb. \$3.50) postpaid.

A & M Mustard

Yellow Seeded Mustard



Chinese White Mustard

name. (Pkt. 5c) (oz. 15c) (lb. \$1.50) postpaid.

Used extensively for spicing, pickling and other culinary and medicinal purposes. The young plants make delicious greens. (Pkt. 5c) (oz. 15c) (lb. 50c).

Common Wild

The seed is very pungent, and on that account is used largely in the drug trade. The young foliage makes excellent greens. (Pkt. 5c) (oz. 10c) (lb. 40c).

Southern Giant Curled

The true curled-leaf variety so popular in the South for planting in the fall. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

Ostrich Plume Mustard

is delicious as well as ornamental; the leaves resemble ostrich plumes, hence the

Chinese White

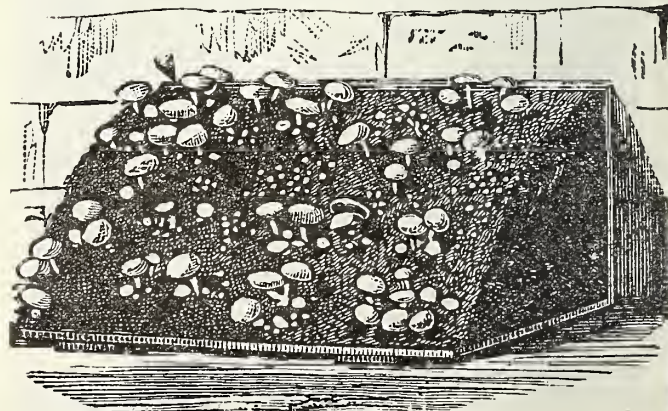
This is a delicious vegetable and flavors strongly of Brussels Sprouts, being less pungent than the American varieties. It is greatly relished by the Orientals, and can be seen all the year round at vegetable stands kept by the Japanese and Chinese. (Pkt. 10c) (oz. 30c) (¼ lb. \$1.00) (lb. \$3.00) postpaid.

Chinese Green

This is an Oriental vegetable, and like the White Mustard, is grown all the year round, but like our American Spinach, thrives best in the winter season. (Pkt. 10c) (oz. 40c) (¼ lb. \$1.35) (lb. \$4.00) postpaid.

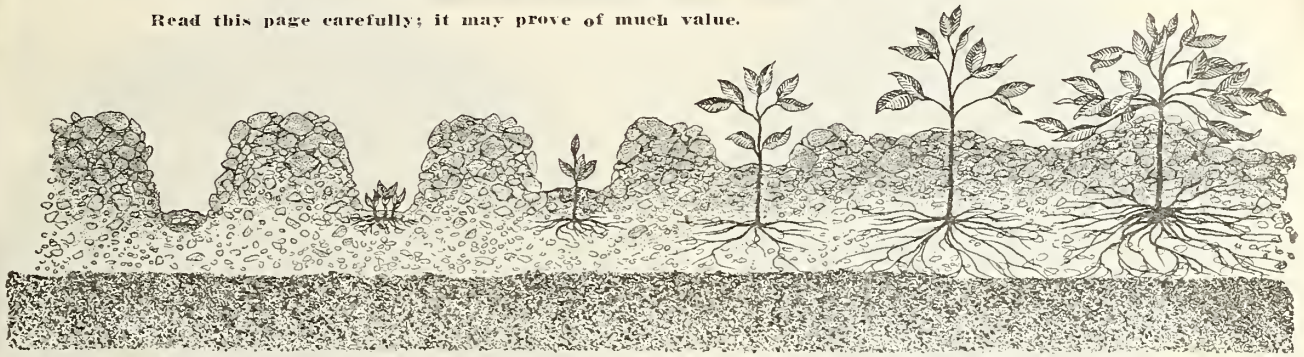


Chinese Green Mustard



Deep Planting to Insure a Healthy Growth

Read this page carefully; it may prove of much value.



Planting

Second Week

Third Week

Fifth Week

Seventh Week

Last Cultivation

READ CAREFULLY (STUDY PICTURE)

Pulverize the soil thoroughly 10 inches or deeper. Make your furrows deep; plant the seed in the bottom of the furrow, and cover one inch deep for vine seeds and two inches for potatoes. In one week the sprout should be above the ground and the plant well rooted. In two or three weeks the vines will be beyond danger from the beetle and should be thinned leaving two plants, and the earth drawn toward the plant until it is about level. In four or five weeks, with plow or cultivator, throw the earth around the plant until the soil is hilled up about the plant and the root system is ten or twelve inches below the surface, but bear in mind that the little feeders come to the surface, and after five or six weeks, cultivation should not be more than two inches deep.

If this method is followed, there will be little danger from blight and the vines will be healthy enough to resist other diseases.

Remember—Apply this method also when transplanting Tomatoes, Cabbage, Cauliflower and almost anything but Sweet Potatoes.

Important Information on Culture

A good rule for planting and irrigating melons, squash, pumpkins, cucumbers and tomato plants.

The soil must be thoroughly soaked two or three feet deep, either by rain or irrigation. When dry enough plow ten or twelve inches deep. Thoroughly pulverize the soil. Make furrows eight or ten inches deep.

Plant the seed in the furrow at regular distances apart, four feet for cucumbers and bush squash, six feet for muskmelons, eight feet for casabas, and nine feet for watermelons, pumpkins and vining squash.

As the plant grows gather the soil around it until the roots are twelve inches or more below the surface. Thin out all surplus plants as soon as they are hardy and well established. The rows are now straight and an equal distance apart. This makes it easy to cultivate close to the hills, both lengthwise and crosswise. Cultivate deeply as long as there is no danger of disturbing the roots. Be always mindful that the roots are as long as the vine, therefore, when working close to the hills and among the vines, let the hoeing or cultivating be shallow.

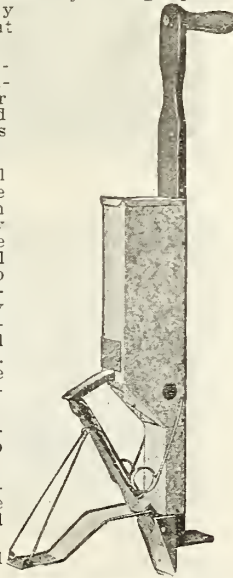
Always cultivate the irrigation furrow as soon as it is dry enough to mulch nicely.

Heavy soil or loam requires less frequent irrigation than sandy soil. The term irrigation means soaking the soil thoroughly, not lightly.

If this rule is intelligently adhered to your vines will never suffer from drouth, or root blight, and will be healthier in every way, because the roots are deep down in the cool, moist earth unaffected by the heat of the sun. This is the secret of success with all midsummer planting.

This method also applies to the transplanting of tomatoes.

Each year this entire page is given to guide the planter to success, from the preparation of the soil to the marketing of the crop. Melons are a short season crop and need constant and active attention until the last melon is marketed. Therefore some suggestions to the inexperienced grower may guard against failures, discouragements and bankruptcy. On the other hand this page may help a grower to success.



All large melon growers are now using the Segment Corn Planter — it does the work better. Price \$2.00 f. o. b. here. Wt. 5 lbs.

For Early Cucumbers, Melons and Squash

Protect Your Plants Against Frost and Insects

Wax Paper Plant Cover

THE ONLY SURE PROTECTION



The Wax Paper Plant Cover is the only sure protection against late frost and insects during the early growth of your vines and at insignificant expense as compared with the cost of insecticides, the continual labor of combatting insects and other pests, and the cost of replanting, besides having a large percentage of vacant hills.

THE WAX PAPER PLANT COVER prevents all this at a cost of less than 1 cent per hill.

We have two grades of paper, either grade is good enough to endure the season. Samples will be furnished upon request.

Parchmyn—the lighter grade.

Purpose	Size	Price per 1000	10,000 lot	Wt. per 1000
Cantaloupes	.....12x12	\$3.00	\$2.80	9 lbs. "
Water Melons	.....14x15	3.25	3.00	13 " "
Cucumbers	.....18x24	7.00	6.75	25 " "
Tomatoes	.....24x36	13.50	13.00	50 " "

WAX—the heavier grade.

Cantaloupes	.....12x12	3.75	3.50	10 lbs. "
Watermelon	.....14x15	4.25	4.00	15 " "
Cucumber	.....18x24	8.00	7.50	30 " "
Tomatoes	.....24x36	15.50	15.00	60 " "

FOR ALL KINDS OF MELONS

FOR APHIS—First keep the vines hardy by deep planting and proper cultivation, irrigation and fertilizing. Then if the aphid appears, which is unlikely, spray with Black Leaf 40, or bury the affected part with dust. Either way is a constant fight. Lady bugs in some instances are destroying the aphid very satisfactorily.

FOR MELON BLIGHT that is caused by a fungus at the root, spray the hill freely with Bordeaux so that the liquid will follow the stem several inches beneath the surface. This should be done as a precaution rather than as a remedy.

One grower reported to us that the melon wilt was destroying his vines. We advised him to apply a cup of Bordeaux to the stem of the plant at the surface of the ground, and soak it in until it was thoroughly applied. This is to destroy any fungus that may exist there. He did so and reported that it saved his field and some of the vines seem to have grown six inches during the first night. Try it.

READ THIS. If you would prolong the life of your vines, make a path between the rows by training the vines to grow along the rows, and not across from one row to the other. Then at picking time do not allow the pickers to tread upon the vines. To do so makes many culls and shortens the life of the vines and lessens your profit about one-third.

A & M Casabas

(If interested write for our Casaba circular)

The casaba can be grown successfully throughout the Southwest.

The casaba is now at full zenith of popularity. Previously it was grown as a late melon to mature after the cantaloupe season. As a late melon its popularity was confined to a limited section near the Coast of Southern California. But it is now demonstrated that it can be grown in all semi-arid sections side by side with the early cantaloupes and watermelons. The carloads of large perfect casabas of the Golden Beauty variety that were shipped from the San Joaquin Valley during the past two seasons, have proven the value of the casaba as an early melon and good shipper equal to the watermelon and cantaloupe. Casabas are shipped to Los Angeles and San Francisco without crating, as are watermelons. They are created and packed in straw for Eastern shipment.

Our prophecy made years ago is now fully realized. We then stated that casbas would be shipped to Eastern markets in carloads, becoming one of California's many commercial products of great value. Stanislaus and Los Angeles counties are most conspicuous as shipping centers. More than one thousand carloads were shipped from these points in normal times.

The introduction of the Hybrid Casaba is a conspicuous example of our persistency in bringing before our growers what we have decided to be a good and meritorious introduction. We knew its merits and were determined that others should know. After fifteen years of continued advertising, the Hybrid Casaba is now acknowledged the most delicious of all melons.

If anyone yet doubts this assertion, get some nice large Hybrids no matter which strain, keep them in a warm place until just soft enough to make an impression with the thumb, like in a melon apple. Put in the ice box for twenty-four hours, then when thirsty and hungry, eat it. You will be convinced it is prince of all melons.

Do not hesitate to plant a large acreage to the Hybrid and give preference to the Golden Hybrid. Its golden color is attractive and causes it to sell more readily at a higher price.

Cultivate the same as muskmelons. Plant according to your locality, from February 15th until July 15th; for late shipping June 1st to July 15th seems to be the best time for planting.

Casabas may be taken from the vine as soon as they lose the green luster, but should not be eaten until the hard rind of the Pineapple and Golden Beauty will give slightly under pressure, but the Hybrid is not at its best until the thumb can make an impression as in a melon apple.

The best way to keep the casaba late into the fall is to gather them together on the hill and cover them completely with the vines, but do not pick them off the vine.



A & M Hybrid

A & M Hybrid

This is a cross between the Winter Pineapple and the Montreal Muskmelon. It grows to a very large size and is of delicious flavor. It is a rampant grower and yields enormously; as many as seventeen large melons were taken from one vine. It is profitable early and late. Plant from March 1st until July 15th. (Pkt. 10c) (oz. 20c) (¼ lb. 65c) (½ lb. \$1.10) (lb. \$2.00) postpaid.



Golden Hybrid

Golden Hybrid Last year we urgently advised the planting of Golden Hybrid, saying the golden color is much in its favor; also that the grower having the Golden Casabas would have preference from the buyer. A few growers took our advice and reported that we were right. Mr. Barnhart of Lankershim had twenty acres of Golden Hybrid, also some of the Improved Hybrid. Mr. Barnhart says, "His Goldens always sold first and as for quality they are just as good as the green and have less tendency to crack open. The rind is just a little bit harder than the green."

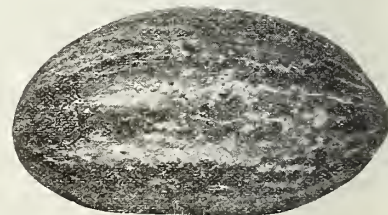
Now growers, all we can add is that it is your loss if you will not plant the Golden Hybrid.

(Pkt. 10c) (oz. 35c) (¼ lb. \$1.00) (lb. \$3.00).

The grower who will supply the market with the Golden Hybrid will be the first to sell and command the highest price.

Santa Claus

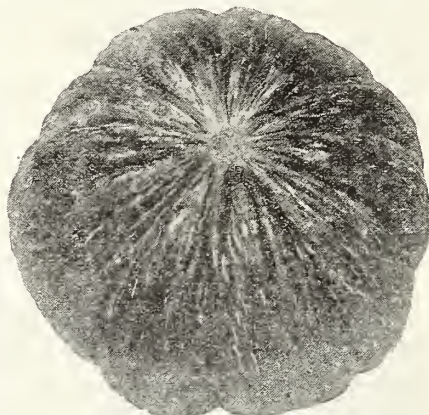
The name is appropriate to the melon. It is a delightful present to send to your Eastern friends at Christmas. It is of delicious flavor, beautiful in its mottled gold and black coloring, and readily keeps until January. We advise that it be grown more extensively for the local trade. The supply has not been equal to the demand for several years. (Pkt. 10c) (oz. 25c) (¼ lb. 80c) (lb. \$2.50) prepaid.



Santa Claus

Improved Hybrid

The melon that made Los Angeles famous. This melon is now grown as extensively for a mid-summer crop as the muskmelon, and finds as ready sale. It originated locally, and is as distinctly a Los Angeles product as is the Los Angeles Market Lettuce. Both have made Los Angeles famous. The local and traveling public are now fully awake to the delicious flavor of this casaba. For the home garden or for the market plant the Prince of All Casabas. (Pkt. 10c) (oz. 30c) (¼ lb. 80c) (½ lb. \$1.40) (lb. \$2.50) postpaid.

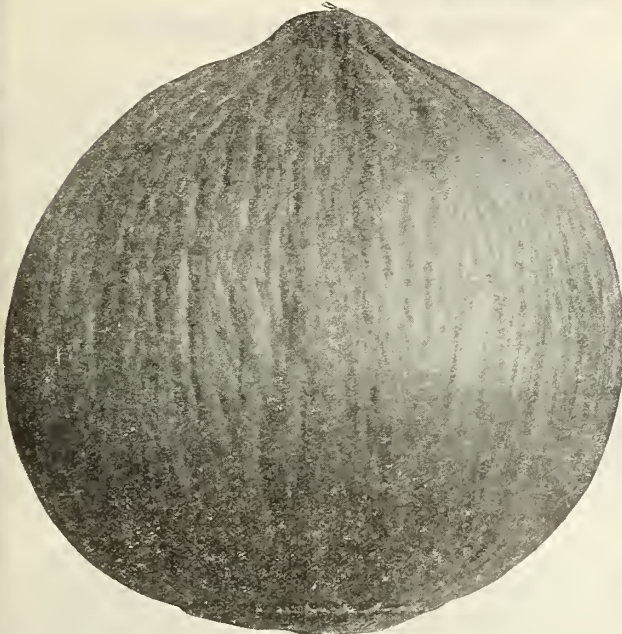


Improved Hybrid
The Prince of All Casabas
introduced by us in 1902

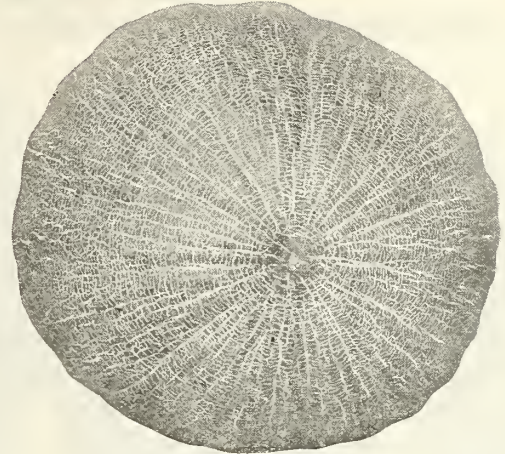
Winter Pineapple

This is the first of casabas introduced into America. We have carefully maintained the purity of type so that it is now just as distinct as when introduced more than forty years ago. This and the Golden Beauty are identical in all except color, which when mature is light green. The Winter Pineapple is more profitable as a late melon, therefore we recommend to growers near the Coast that it be planted during June. Our type of Winter Pineapple is round, selected for its good shipping qualities. (Pkt. 10c) (oz. 25c) (¼ lb. 80c) (lb. \$2.50) postpaid.

A & M CASABAS—(Continued)

**Golden Beauty**

Our seed will grow 100% like this picture

**True Armenian**

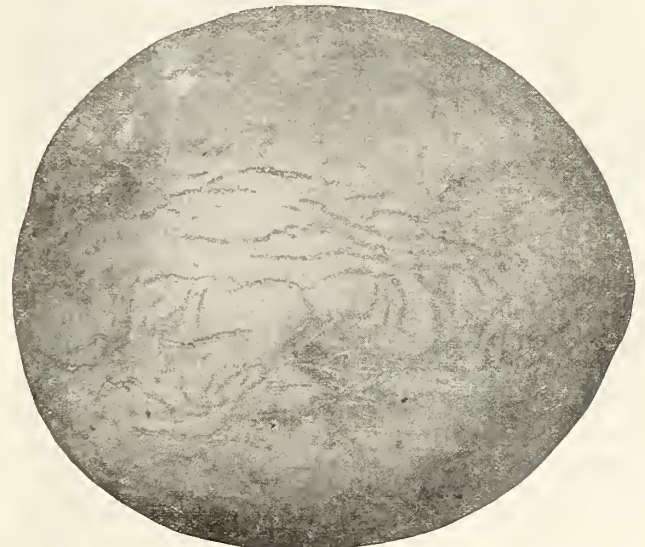
Pure seed is very scarce. We have a limited quantity 99% pure and some about 75% pure. All are good.

A & M True Armenian Melon

This melon is in a class by itself, just as distinct as the Casaba or Muskmelon, but it is here to stay and is growing more popular each year. There is a persistent tendency to variation as to type, but all melons are good ones. Do not hesitate to plant it. (Pkt. 20c) (oz. 60c) (¼ lb. \$2.00) (lb. \$6.00) postpaid.

Honey Dew

The melon with an appropriate name

**Honey Dew****Honey Dew**

The melon with an appropriate name. The Honey Dew again made good last season. It exceeded other melons in popularity on the local market and was profitable to the grower. It yields enormously, and every melon is a good one.

It is ready to pull when the color shows the slightest tendency toward yellow, and ready to eat in a few days when it is slightly soft.

The picture is typical of its shape; the average size is about as large as a coconut, but the smaller sized melons are not inferior in flavor. Every melon is a good one. Flesh is light green and sweet as honey. The rind is light green or silvery-gray in color, smooth as an egg and hard as the rind of a winter squash. It is therefore a good shipper.

A News Item:—"Horticultural Commissioner Waite is authority for the statement that a Japanese in the Brawley district raised 700 crates per acre of Honey Dew melons. The early crates brought \$6 per crate. The larger part of the crop brought \$3 per acre."

(Pkt. 10c) (oz. 30c) (¼ lb. \$1.00) (lb. \$3.00) postpaid.

COMPLIMENTARY

JOHN JENS, California

I have just received your splendid catalog and I am full of gratitude for it for it is the best I ever have seen in all my life. I have been a gardener for 39 years.

Golden Beauty

Introduced by us in 1906, it at once became popular locally. It is now grown more extensively throughout California than any other casaba because of its beautiful appearance, excellent shipping qualities and delicious flavor. It is the casaba that added much to the fame of California, as well as adding a million dollars each year to the wealth of the state. (Pkt. 10c) (oz. 25c) (¼ lb. 80c) (lb. \$2.50) postpaid.

Golden Honey

This is quite distinct from the other casabas, and you will believe it has some special merit not possessed by the others or we would not offer it. Its great merit is its good keeping, good shipping, good looking and good tasting qualities. It is round as a cannon ball, size of a coconut, yellow as an orange, hard and solid as a base ball. May be shipped to New York in November and served for breakfast at Christmas to the delight of the consumer.

(Pkt. 10c) (oz. 35c) (¼ lb. \$1.60) (lb. \$3.00) postpaid.



Los Angeles Terminal Market—The Largest Market Place in the World

Here is a complete working community. A produce exchange, Bank, Hotel, Restaurants, Market Stalls for the retailer, and shipping facilities for wholesale.

This is an afternoon picture, an early morning picture would show a thousand trucks lined in four rows from one end to the other.

COMPLIMENTARY

MRS. W. A. MORRISON, California

I received your beautiful catalog. Many thanks. The 1918 catalog was a great benefit to me as I never had such good success with a garden as I had this last year. Seeds and plants are all very satisfactory.

A & M Muskmelons

YELLOW FLESH VARIETIES

GREEN FLESH VARIETIES



The Famous Indiana

The Famous Indiana

Introduced at a wayside market two years ago at Gardena by E. Hauenstein, and at Lomita by Mr. Emil Hauenstein.

Motorists soon learned the excellence of this melon and it was not unusual to see a score of machines in front of these places and customers impatient to be waited on. This picture perfectly portrays the melon which has a rich yellow flesh and a flavor that may be compared with the Armenian.

In offering this melon we are quite in line with our established policy of bringing to your attention only the varieties that have been tried, proven and known to be of exceptional merit. We did the experimenting, you take no risk.

Butler Brothers of Lamanda Park, say of it, "It is an improvement over the Tip Top, your seed is pure, the melons are uniform."

We believe they are better than the Tip Top. A letter from our seed grower says, "All the melons I am growing for you are fully up to your description. The Indiana is by far the best melon that I am growing for you, the seed is very pure as all the melons are uniform in appearance. It is heavily netted, very thick meat and holds up in good condition for several days. (Pkt. 10c) (oz. 30c) (¼ lb. \$1.00) (lb. \$3.00).

A & M Tip Top

This melon is very popular almost to the exclusion of any other variety. This is a fine, round melon of such attractive appearance as to always sell quickly in the markets. It is sweet, juicy and delicious. The flesh is firm, but not hard, and is edible almost to the rind. The melon is of medium to large size and is one of the best yellow fleshed varieties. Our grower says our seed grows melons of uniform type exactly like the picture. (Pkt. 10c) (oz. 25c) (¼ lb. 85c) (lb. \$2.50) postpaid.

Improved Osage

This has for many years been one of the leading varieties in the East because of its earliness and excellent flavor. It is of medium size, salmon flesh, with green rind, similar to the well-known Burrell's Gem. Once a customer for Osage, always a customer. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Improved Burrell's Gem

Has established itself as a standard melon. It is one of the biggest yielders. The shipper calls for it because it is solid and carries well in transit. The consumer wants it because of its excellent flavor. The growers all want our seed because we have the best strain. Many growers who bought of us last year have engaged their seed for next season. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Yellow Flesh Columbus

This excellent muskmelon originated here and was introduced by us three years ago. It at once became popular with the cafeteria and hotel trade, where the entire crop of the first year was consumed. The second year the peddlers discovered that it would carry two and even three days on their wagons without deterioration. The storekeeper, too, learned of its good keeping qualities, and the housewife learned to know that every melon is a good one, so that it is now one of the most popular muskmelons in the Los Angeles market. A slightly oval melon about seven inches in diameter, entirely without ribs, but roughly netted; color, outside light creamy, inside yellow. It is enormously productive. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.

A New Remedy to Combat the Beetle from Wm. E. McAffee, Kentucky:

"I note your preventive remedy for the Melon beetle. We have one here that is very simple, profitable and effective. When you plant your seed, set an onion set in each hill close to the point where the melon plant will come up. After the plant is out of danger you can market the onion if you so wish. I tried this remedy last year and saw but three bugs in my patch and these did no harm. I had the same experience with my cucumbers."



The Original Gautier Pineapple

The Original Gautier Pineapple

All old-time melon growers will remember the popularity of the muskmelon introduced at this market by Mr. Gautier, and for years known as the Gautier Pineapple.

It is medium to large size, heavily netted, green-fleshed with excellent flavor; solid and a good carrier.

The true type was running out and fewer of them grown.

We are now able to announce that we again have the true type and recommend it to melon growers that they may again get the Old Original Pineapple Muskmelon. (Pkt. 5c) (oz. 20c) (¼ lb. 60c) (lb. \$1.75).

A & M Nutmeg

This melon, in appearance, is so similar to the Pineapple that many growers fail to notice the slight difference in shape and netting, but the greatest merit is its excellent flavor. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

A & M Triumph

Is similar to the Pineapple, but not so large. This is much in its favor, as gardeners are complaining that the Pineapple is too large. It excels the Pineapple, in the excellence of its flavor, and is two weeks earlier. (Pkt. 5c) (oz. 20c) (¼ lb. 60c) (lb. \$1.75) postpaid.

Rocky Ford

(Pollock No. 25) The flesh is light green in color. The flavor is exceedingly fine. The skin is regularly ribbed and thickly netted. It is a firm, solid melon and will carry in perfect condition for a week or more after its removal from the vine. It is a heavy cropper, and in wide favor as a market melon. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Our Gold Lined Netted Rock

This is the Rocky Ford with the tinge of yellow around the seed cavity bred up to the highest state of perfection from the rust-resistant strain. The heavy netting forms a rind so hard that it will ship to the far Eastern markets with practically no deterioration. The flavor outclasses all other strains of Rocky Ford. Turlock growers and shippers will have no other. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Jenny Lind

An old time favorite; small, heavily netted, well ribbed, very early and of excellent flavor. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Large Hackensack

A large, round melon, flattened at the ends and well ribbed. Sometimes called Turk's Cap. The skin is deeply netted. The flesh is green, of delicious flavor. It is a strong grower, and is very productive. An old standard melon, in favor with market gardeners. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Los Angeles Market

This is the largest of all the Muskmelon family, and we positively state that none will excel it in flavor. Gardeners object to its large size, but good profit will come to the grower who will plant it. It yields an enormous crop and all melons are very large and beautiful. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Pomegranate, or Peach-Melon

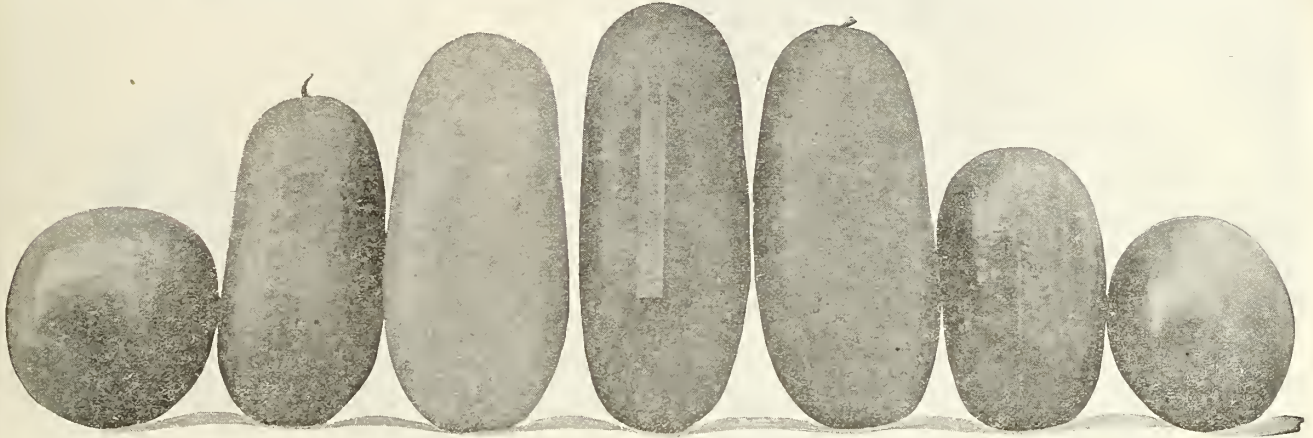
For Mangos. (Pkt. 5c).

READ

Mr. Butler of Lamanda Park says: "Last year I had Melon blight and tried your Bordeaux remedy with good results. This year I tried your deep planting method and had no blight."

A & M Watermelons

Write United States Department of Agriculture, Bureau of Plant Industry, Washington, D. C., and ask for "Farmer's Bulletin No. 821," Watermelon Culture.



ANGELENO BLIGHT PROOF IRISH GRAY TOM WATSON EXCEL KLONDIKE CHILIAN

All the varieties of melons shown in this picture were grown under contract for us. It would be hard to imagine more prolific fields of large perfect melons than was the Tom Watson, Irish Gray and Excel. Eighty pound melons were numerous. Fifty pound melons were common, and the average would run fully 30 pounds and not an impure one in any of the fields.

Mr. Grower, you cannot get better melon seed than we are offering you.

News Item: "Aram Jacobs of Brawley sold 500 tons of Watermelons from 40 acres, at prices that ranged from \$80 per ton for early shipments to \$20.00. This means \$10,000 from his 40 acres, during a period of less than five months. He can grow and harvest another crop within the year.

Culture—Plant the seed in a furrow, dropping six seeds every eight or ten feet apart; cover about two inches. As the vines grow, hill the earth about them until the roots are ten to twelve inches deep. When the vines are safely established, thin out, leaving only two vines to the hill. It is a good plan to establish your rows by throwing the soil toward the center, with one round of plowing, and cultivate every week during the early growth of the plants. This gives deep cultivation at the time it is needed, mulches the soil properly, makes proper rows slightly raised in the center, allowing a low place between for irrigating. Be sure to cultivate after each irrigation, as soon as the nature of the soil will permit. If these instructions are carefully followed you will have thrifty vines throughout the season.

For Melon Blight—Mr. Van Norman of San Gabriel says: "Cover the centers where the blight first appears, with soil. It gives new life to the vines and prevents the spread of the blight."

For Melon Wilt—Pour a cup full of Bordeaux Mixture at the mainstem so that the earth will be saturated and the liquid thoroughly applied to the stem. Here is the seat of the trouble, whether fungus or an insect, and the Bordeaux will remove the cause. Butler Bros. of Lamanda complained to us that their vines were dying of wilt. We recommended this remedy which they at once applied only to the vines attacked, with the result that the vines revived, and in one night appeared to have made a new growth of six inches. They then applied it to the entire field, and saved it for the season. But Mr. Butler says toward the close of the season it appeared again, and he believes the Bordeaux should be applied at least twice during the season.

Chilian For twenty years the leading melon and just as popular today as at any time, and is likely to continue its popularity for many years to come. Its thin rind and delicious flavor commend it to the consumer, but its good shipping and selling qualities make it a favorite with the grower and dealer. It is very prolific and just a desirable size for the peddler to handle, and every melon is a good one.

White Seeded Chilian

Preferred because of its large average size.

Red Seeded Chilian

Preferred because of a sweet flavor peculiar to itself, and earliness.

Black Seeded Chilian

Preferred because of its earliness, short crop and black seed, which gives it preference at restaurants, hotels and cafeterias.

All Chilians are good regardless of the color of the seed, but the Black Seeded one is planted for early crop.

Price of all Chilians (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50).

Peerless

Also called Red-fleshed Ice Cream. This is the melon that proved so popular in Oregon and Idaho last season. It is early, a good shipper and a delicious melon. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50).

Rattlesnake

Has long been a popular melon with shippers. It is a long melon, having a white rind, with dark green stripes. Flesh of excellent flavor. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

Klondike

This is now undisputably the most popular melon on the Los Angeles market. Why? Because it has a flavor quite as distinct from other watermelons as is a Bartlett pear from any other pear, and is sweeter even to the thin rind than any other. It is popular with the grower because it is wonderfully adapted to dry farming, wonderfully prolific, early, long and continuous bearing; the vines seem in their prime in September and October, long after other varieties have disappeared. Planted in rows twenty feet apart on dry soil that has been scientifically prepared the vines will interlace.

The seed is small. One pound of Klondike will number as many seeds as two pounds of other varieties. The color of the seed is brown, mottled black. Brown seed (Pkt. 10c) (oz. 30c) (¼ lb. \$1.00) (lb. \$3.00) postpaid.

EMMIT H. SMITH, Willows, Cal.:

"Your Klondike is the finest melon we ever ate." That is what they all say.

White Seeded Angeleno

The most attractive in appearance of all watermelons,—its large size, beautiful dark green rind with a tinge of gold showing through the green. No other variety compares with the Angeleno in its bright red flesh, red to the rind and entirely free from fibre, simply melts to water, and not excelled in flavor. If the picker will observe the gold showing through the green as soon as it is ripe, he need never pick an unripe melon.

As a shipper it is extraordinary because it rarely breaks, even supporting the weight of a man weighing 170 pounds. A carload will average in weight from 25 to 30 pounds to the melon. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Important Notice—Owing to the tendency of the seed of this melon to split open, we advise you to soak the seed in water for only a few hours. It soon closes and is ready to plant, and every seed will germinate, but if planted before soaking, the seed fills with dirt and decays. Please heed this notice.

Black Seeded Angeleno

Owing to the persistent demand for a black seeded melon, we have by hybridizing the Angeleno with the Black Seeded Chilian, and by four years of selection, succeeded in producing a pure Black Seeded Angeleno. It lost none of its excellence; indeed, if it were possible, it has improved. This improvement is noticeable in melons that show a trace of the stripe of the Chilian. When you see the stripe you know it is a good one. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.

If you want a black seeded melon, do not hesitate to plant the Black Seeded Angeleno. It is all right.

Red Seeded Angeleno

In the process of breeding the Black Seeded Angeleno we have some Red Seeded Angeleno. This melon differs only in showing more of the stripe of the Chilian. The quality of the melon excels in sweetness the pure White Seeded Angeleno. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

A & M WATERMELON—(Continued)



A Delicious Winter Melon

Winter Melon This new melon is slowly but surely forcing itself into favor because of its many good qualities which are not apparent at first acquaintance. Like the Casaba which required 12 years to establish its reputation. The Winter Melon might easily be mistaken for a small white citron and the dealer must be convinced, then in turn must convert his customers to the knowledge that the Winter Melon is a thing of great luxury. It is late to mature; very light in color with a suspicion of a stripe; size 10 inches in diameter; seed small shiny black, flesh pink, solid and stringless. The flavor when cold is sweet, crisp and surprisingly delicious, and when you have finished you realize that you have eaten a melon as entirely distinct from a water melon, as the Casaba is apart from the Cantaloupe and just as delicious. Like the Casaba it should not be eaten right off the vine, but be allowed to lie around until the first signs of decay. It decays slowly like an apple, not like other watermelons. We prophesy this year of 1919 that the melon will be, sooner or later, handled in carlots for late fall shipping, as is the Golden Beauty today, because it has merit that will win.

The seed is scarce and while it lasts we will offer it at low introductory prices. (Pkt. 10c) (oz. 30c) (¼ lb. \$1.00) (lb. \$3.00).

Read this from Mr. Walker Jones, Horse Canyon Ranch, Phelan Calif:

"I experimented with a great variety of seeds from your house. The Winter Melons did best of all here, and were of the first to ripen—were most delicious melons I ever ate. Chilians did next best. Tried out over 20 kinds. Elevation here at 4,550 at north base Old Baldy.

Florida Favorite This melon is very popular with shippers, because of its extreme earliness, and all round good qualities as a good shipper. In appearance it is similar to the Rattlesnake, the rind being considerably darker. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

Yellow-Fleshed Ice Cream Watermelon

This melon grows a very large size, is long in shape and the rind an even dark green. In quality it is simply delicious, sugary and of a rich flavor peculiar to itself. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

The Tom Watson has for several seasons been the most popular melon in the South. Its shape is similar to the Kleckley Sweet, but the color is a lighter green. Its great merit is in its earliness, good flavor, thin rind, and good keeping qualities, making it one of the best of shippers. It is popular in the San Joaquin Valley. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Kleckley Sweet This is an excellent melon either for the home garden or for shipping. It is of medium size, a very green rind, with deep red flesh of delicious flavor. Our seed positively cannot be excelled. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

The Excel A new black seeded melon that has made a sensation in the South and in the San Joaquin Valley. Its surpassing merits are in the size (average weight per melon in car is 35 pounds), enormous yield, and excels all others as a shipper.

We planted an acre on our trial grounds and find it is not only all that is claimed for it, but we were surprised at the excellence of its flavor.

We recommend it to all shippers who want a very large melon. (Pkt. 10c) (oz. 30c) (¼ lb. \$1.00) (lb. \$3.00).

Our Selected Melon Seed Owing to our extensive trade with large melon growers and associations, we exercise every precaution possible to secure the best type of melons. Having procured the best seed obtainable, we have them grown especially for us. Our seed fields proved the wisdom of this method, for they showed the highest per cent of perfect melons.

Bran Mash for Cut Worms Paris Green 1 lb., lemons 3, molasses 2 qts., water 3½ gals., bran ½ bu. Mix bran and Paris Green dry; cut lemons into fine pieces. Mix all thoroughly. See page on Insecticides.

A NEW WATERMELON

Irish Gray A New Watermelon. See Page 37. This new watermelon has the merit to become very popular as a shipper, also as a late melon. The introducer describes it as follows: "The color of the rind is yellowish grey, resembling a variety of Citron, and the rind is almost as tough as that of the Citron, it will keep in good condition for a long time after being taken from the vine, and stand long distance shipping better than any other melon, the flesh is bright sparkling red very sweet and firm. As a home market melon it is better than Kleckley Sweet and for distance shipping it is far better than Tom Watson, it will produce 25 per cent more good melons than Tom Watson under the same conditions and carry 1,000 miles and back over the same route then open as good as a freshly picked Tom Watson, the rind will not sun-bake, the vines are most vigorous and wilt resistant."

A letter from our Grower:

"I feel that you will want to increase the order before the season is over next spring. I consider the Irish Grey the best melon for all purposes ever offered the American people. I have shipped this season several hundred cars and only one complaint. This was from a car of very small melons and they did not cut as good as the larger sizes, but a Watson of the same size would be worthless. One car was shipped to Seattle from Auburndale, Fla., 25 days in transit and arrived in splendid condition."



Large Green Striped Citron. Wt. 60 lbs.

Citron Large Green Striped

Weighs from thirty to sixty pounds. Is better than pumpkin for stock. Allowed to lay in field or piled in the barnyard will not be damaged by frost nor decay until the following summer. (Pkt. 5c) (oz. 10c) (¼ lb. 25c) (lb. 75c) postpaid.

Preserving Citron Red Seeded, small round melon. This melon with a proper portion of lemon makes an excellent preserve that is as good as marmalade. (Pkt. 5c) (oz. 15c) (¼ lb. 35c) (lb. \$1.00).

FARM AND HOME DRYING OF FRUITS AND VEGETABLES

The bureau of plant industry, United States department of agriculture, has issued Farmers' Bulletin 984, "Farm and Home Drying of Fruits and Vegetables," by Joseph S. Caldwell. Imperative necessity demands nation wide conservation of those portions of our food crops which have heretofore been permitted to go to waste. A considerable portion of this wasted food material is made up of perishable fruits and vegetables produced in home gardens and fruit plats in excess of the immediate needs of the producers and in the absence of accessible markets for the surplus drying offers a simple, convenient and economical method for preserving food materials and permits the carrying over of the surplus into periods in which fresh fruits and vegetables are expensive or unobtainable.

The bulletin may be had without cost by writing Division of Publications, United States Department of Agriculture, Washington, D. C.

Plans from which to make a vegetable drier will be found in Extension Circular 23 of the University of Missouri College of Agriculture. This circular also contains directions for drying fruits and vegetables, and for storing and using the dried products. Send for this circular.

COMPLIMENTARY

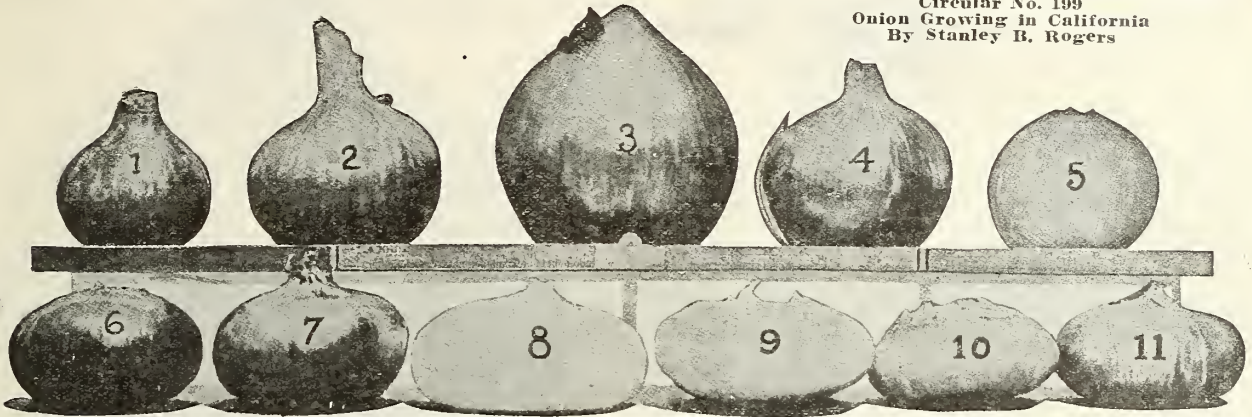
F. Y. McCANN, Napa County, Cal.

I would like very much if you could please send me your latest catalog. I have handled your goods in the southern part of the state, now I am going into the vegetable business here and would like to have your seeds and plants as I know that I would get better results from you than any other seedsman that I know of. I will not take any other seeds until writing you as I have a good place with abundance of water and a good market.

A & M Onions

SEE BACK COVER

California Agricultural Experiment Station
Circular No. 199
Onion Growing in California
By Stanley B. Rogers



1. Australian Brown
2. Ohio Yellow Globe
3. Prizetaker

4. Yellow Globe Danver
5. Southport White Globe
6. Yellow Flat Danver

7. Red Weathersfield
8. New Queen
9. White Portugal

10. Crystal Wax
11. White Bermuda

Culture—No crop is so liable to variations by cultivation and soil as the onion. Having rich soil with too much irrigation will produce thick-necked scallions, while the same soil, well drained, would produce the finest onions. A sandy loam well fertilized is best.

No vegetable is so sensitive to variation of climate as the onion. It is of utmost importance that the right variety is selected for each month in the year, and for your particular climatic conditions.

Either drill the seed thinly in rows fourteen inches apart, or sow the seed in seed beds, and when the plant is as thick as a straw, transplant on ridges; set two rows on each ridge and four inches apart in the row. See page —

Irrigate in the furrow between the ridges to avoid flooding the onion, which causes the onion to rot readily, rendering it unfit to ship or to keep.

To succeed in growing onions it is highly important to make a proper selection of seed suitable to the time of planting. West of the Coast Range plant the Queen variety in August and September. They will then attain marketable size in March and April. If, however, the weather during February and March proves to be cold and rainy, a large percentage will shoot to seed. We advise that you pinch of the seed stem close to the onion. It will heal with no damage to the onion. East of the Coast Range, where the temperature is more uniform as in Coachella and Imperial Valleys, plant the Crystal Wax or Bermuda onion in September. We advise planting all other varieties from October until April, selected according to the market in which they are to be sold, and the facilities for irrigating.

The consuming public prefers a white onion. The retail merchant wants a yellow onion because the white are too perishable. The shipper will handle the yellow, but prefers the brown because it is the best keeper.

The White Australian should prove popular because of its good keeping qualities.

Three pounds of seed are required to plant one acre for dry mature onions. One ounce will plant one hundred feet of row. For bunching onions, plant one-fourth pound of seed to 100 feet of row.

We claim our onion seed to be the highest type as to germination and purity. When you wish to plant onions consult us as to when, how and what variety to plant.

Onions intended for storage or long keeping should be taken up while the stems are yet green, just showing a tendency to dry up. Experience has proven that this is the best time. When allowed to remain in the field too long they are liable to be sun-scalded, or attacked with smut.

MARKET:—The market for onions is large; no other vegetable is in such wide demand and is used largely by all nations over the entire world, yet on account of the perishable nature a wide distribution is not possible; therefore, an over-production is soon a drug on the market and the grower finds the crop worthless.

Therefore, when planting them, select the variety according to the market for which they are intended, time of planting in your locality.

For shipment, you will make no mistake to plant Yellow Globe from September 15th until March; White Australian or Silver-skin November 1st until April 1st, and the Australian Brown from January 1st until April 1st.

For early local trade, plant Crystal Wax, Yellow Bermuda, Prize-taker, Denia, Giant Gibraltar, Ailsa Craig, and New Queen.

Ohio Yellow Globe This onion is the standard winter sort in many markets. The shape is almost globe form and the bulbs are quite large with thin necks. The skin is yellow, while the flesh is pure white, solid and of good quality. Its earliness makes it valuable for market. The crop is very uniform and ripens at one time. (Pkt. 5c) (oz. 25c) (¼ lb. 85c) (lb. \$2.50) postpaid.

White Portugal, or Silverskin A good second early white flat onion to follow the Extra Early White Queen. It should be planted any time from November 1st until April 1st. It is a good keeper and desired for shipping. It has long been a favorite, and probably no other variety is more generally popular with growers throughout the United States. Under good cultivation the average diameter is from four to six inches. The thick skin is a clear silvery white, flesh snow-white, sweet and tender. (Pkt. 5c) (oz. 35c) (¼ lb. \$1.20) (lb. \$3.50) postpaid.

Southport White Globe This onion now easily leads all other varieties in popularity on the Los Angeles market, and is selling more readily and at higher prices. It is a good keeper, either in the field or in cold storage. It is a silvery white in color, globe shaped, and of delicious flavor. It is the popular onion with the shipper. (Pkt. 5c) (oz. 35c) (¼ lb. \$1.20) (lb. \$3.50).

Extra Early White Queen This is by far the earliest and best onion to grow in Southern California. Planted during August and September it attains marketable size in March and April and is sold on the local market as early as the Bermuda. Local growers market them while yet quite young, cutting the top off close to the onion. They harvest only what can be sold from day to day.

This practice is very profitable for the reason you are selling a green onion at the price of the early dry onion.

For three years we have been unable to obtain seed, on this account growers have used other varieties. But now that sufficient seed may be had we advise growers for local markets, it will add greatly to your profit to plant the Queen Onion next August and September. (Pkt. 5c) (oz. 40c) (¼ lb. \$1.35) (lb. \$4.00).

Yellow Flat Danver Similar to the Yellow Globe in color and quality, but somewhat flattened in shape, and is earlier. It is a fine large onion with a very small stem. (Pkt. 5c) (oz. 25c) (¼ lb. 75c) (lb. \$2.25) postpaid.

Extra Early Red Flat This is the early onion grown in the Sacramento Valley for the San Francisco market, where it is in great demand. (Pkt. 5c) (oz. 20c) (¼ lb. \$1.20) (lb. \$3.50) postpaid.

Red Weathersfield Probably the most popular red onion, and the one grown more largely throughout the United States than any other. It is a large, medium flat onion of excellent mild flavor. (Pkt. 5c) (oz. 25c) (¼ lb. 85c) (lb. \$2.50) postpaid.

Southport Red Globe This beautiful onion is coming into favor here. It keeps better than other red varieties. (Pkt. 5c) (oz. 30c) (¼ lb. \$1.00) (lb. \$3.00) postpaid.

Australian Brown Quick to mature; a good keeper; solid and heavy; an excellent onion for shipping. The skin is a light brown. Its solidity gives it great weight and a sack weighs several pounds heavier than a sack of other varieties. The onions are thin-necked and ripen very early in all soils. As the plant makes a very quick growth it matures the bulbs before the hot, dry summer weather sets in, and this in connection with its exceptional keeping qualities makes it a most profitable variety. (Pkt. 5c) (oz. 30c) (¼ lb. 85c) (lb. \$2.50) postpaid.

See next page for a description of the new Giant Onions. See picture on Back Cover. These Onions are money makers. One packet of each for only 50c.

A & M ONIONS—(Continued)

Large Onions are now the style. This has been brought about by the introduction at Riverside, Cal., of

The Famous Riverside Sweet Spanish Onion

See Back Cover

Very large, light yellow, globe shaped, small top, good shipper.

This Onion was brought from Spain four years ago. A small acreage was grown, the product of which was sold at the stores of Riverside, California. The unusual mildness and excellent flavor made this onion popular at once. A larger acreage was grown and the popularity broadened until the onion is in demand in Portland, Oregon, Chicago and as far east as Detroit, Michigan. The grower is receiving seven cents per pound while the market price of onions is only three and four cents.

It is a good keeper and not prone to smut, we do not say it is immune but the grower gives the following directions for curing and keeping this onion and if followed there is little likelihood of smut.

Plant in December or January. It will mature in September when there is no danger from sun scald. Allow the onion to thoroughly mature until the tops have fallen and dried and decayed.

Then pull the onions and allow them to remain in the field in rows well covered with the tops, which after a week of favorable weather become dry as chaff. The tops are then rubbed off and the onion put in crates and stacked loosely in a shaded but well ventilated place. After four to six weeks the onion is so thoroughly cured it may be safely shipped to any city within the United States.

Seed is very scarce but it will be very profitable to the grower who will plant this onion.

To obtain the highest price, this variety should be planted about February 1st; they will then mature about Aug. 1st, and if the prevailing price is too low put them in cold storage.

(Pkt. 25c) (oz. \$1.00) (¼ lb. \$3.00) (lb. \$9.00) postpaid.

White Australian

As compared with the Brown Australian—shape, the same; size, one-quarter larger; keeps as well; is earlier; color is nearly pure white.

Our growers says, "The field of White Australian shows fewer scallions than the Brown. They are a decided improvement over the Brown in every way as well as color."

Five years ago we had a quantity of this seed which was widely distributed. In New Mexico, Arizona, Texas, and in the San Fernando Valley, California; everywhere it was grown it attracted attention because of its superiority. At that time it was not yet true to type; the seed produced many odd colors, but notwithstanding this fact, the growers wanted it year after year. But we withdrew it until we could by selection produce a white onion true to type. Now after three years of selection we offer you a pure White Australian Onion. (Pkt. 10c) (oz. 50c) (¼ lb. \$1.50) (lb. \$4.50) postpaid.

Yellow Australian

At the same time we were by selection fixing the type of the White Australian, there developed an unusually large pure yellow onion which we selected, and now have only a few pounds of seed. We do not hesitate to advertise this as the largest type of yellow onion in existence. It is much larger than Giant Gibraltar and would surely take a Blue Ribbon at any fair.

(Pkt. 10c) (oz. 65c) (¼ lb. \$2.00) (lb. \$6.00) postpaid.

Mr. A. E. Imbler, our grower, says of it: "They are in shape nearly a globe and field run is nearly uniform in size, from 1 to 2 pounds. With better care I believe they would run twice the size. They keep well for a large onion and are very mild. I think they should be grown extensively."

Giant Gibraltar

Large, Brownish Yellow, somewhat flattened on under side; often weighing four lbs. Is a good keeper and is known to be adapted to climatic conditions of the southwest. (Pkt. 10c) (oz. 50c) (¼ lb. \$1.50) (lb. \$5.00) postpaid.

Denia

One of the large Spanish types with extraordinary mild flavor; nearly a globe shape, slightly flattened, color light yellow. It is popular in the south and we recommend it to gardeners having a large local trade, and who want the heaviest yield possible. (Pkt. 10c) (oz. 50c) (¼ lb. \$1.50) (lb. \$5.00) postpaid.

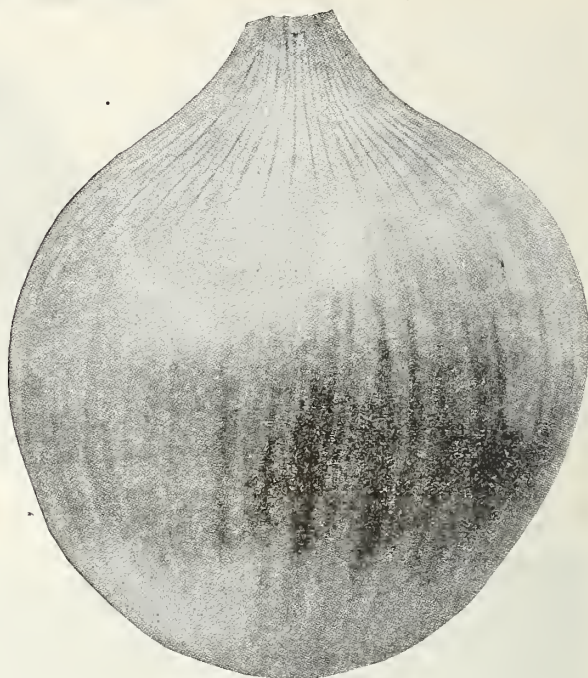
Ailsa Craig

Large, Light Yellow, globe. Average weight of 600 onions from one row (not selected) 2½ lbs. Extra selected 3 lbs. 9 oz. Probably the largest and heaviest cropping onion. (Pkt. 5c) (oz. 50c) (¼ lb. \$1.50) (lb. \$5.00) postpaid.

Prizetaker

A large Yellow Globe Onion of finest flavor, handsome shape and enormous size, many single onions having been raised to weigh three pounds or over. The Prizetaker grows always to a perfect globe shape with a bright straw-colored skin. (Pkt. 5c) (oz. 50c) (¼ lb. \$1.50) (lb. \$5.00) postpaid.

J. H. Peck, Selma, Cal., writes: "I planted ¼ lb. of your Prizetaker onion seed last year on March 4th on just one-tenth of an acre on reclaimed tule land, never irrigated at all. I harvested 95 sacks of 100 pounds each of fine marketable onions weighing from ½ to 3 pounds each."



Riverside Sweet Spanish

Red Bermuda

The mildest onion that grows. In shape, like the White Bermuda, color a pale red.

Planted during January matures latter part of June. No other onion is ready for use so quickly after planting seed. It is the right onion for the Home Garden.

(Pkt. 10c) (oz. 35c) (¼ lb. \$1.20) (lb. \$3.50) postpaid.

Crystal Wax and Yellow Bermuda



These two varieties go hand in hand; they require the same climate and culture; where one thrives the other also thrives. They mature at the same time and bring about the same price on the market.

The Crystal Wax is a medium sized pure, waxy white onion. The Yellow Bermuda is about the same size as the Crystal Wax, but a yellow straw color.

These are the varieties that are grown in Southern Texas and in Coachella and Imperial Valleys to the exclusion of every other variety. Why? Because they are adapted to that climate; because when planted the latter part of September they mature in March and April, just when the market is bare and the price is highest. Onion growers are satisfied with 300 crates per acre, and 25% off color. Our seed produces 500 to 800 crates per acre, with less than 1% off color.

Crystal Wax—(Pkt. 10c) (oz. 66c) (¼ lb. \$.75) (lb. \$5.00) postpaid.

Yellow Bermuda—(Pkt. 10c) (oz. 35c) (¼ lb. \$1.20) (lb. \$3.50) postpaid.

Growers of Bermuda Onions

We have a limited number of Prof. F. W. Mally's Bulletin on the subject of the Bermuda Onion.

It is thorough and complete in every detail of the culture of this onion—preparation of the soil, seed beds, preparation of the field, planting culture, irrigation, cultivation, fertilizing, harvesting and marketing.

Much of the cultural instructions in this book will apply to other than The Bermuda Onion.

If you wish this Bulletin, send five 2-cent stamps either to us or to the Commissioner of Agriculture, at Austin, Texas.

A & M Onion Sets

Australian Brown, Yellow Danver (lb. 35c) and Silver-skin (lb. 40c) prepaid. Write for quantity prices.

The earliest onions are grown from sets planted in September. This brings them in the market in February and March, when prices are highest. About 250 lbs. of sets will plant one acre.

For the home garden no vegetable is so valuable as the onion, and for this purpose it is better to plan sets, because they are ready for the table six weeks after planting. Set them three inches apart in rows six inches apart. When ready for use, take up every other one as needed, allowing the balance to grow to mature size. One pound of sets will plant about fifty feet of row. (Lb. 40c postpaid) (10 lbs. \$2.00 f. o. b. here). For larger quantities write for prices, which range from \$15.00 to \$20.00 per 100 lbs.



Bunching Onions

round. (Plants, 1 bunch, 10c) postpaid.

Chives are also easily grown from seed. Sow in beds and transplant as soon as they begin to multiply. (Pkt. 10c)

A & M Garlic

Garlic was so scarce that last fall there was insufficient for seed purposes, with the result that the price must be high all through the year of 1920. Therefore, notwithstanding the high price of seed it would be advisable to plant garlic this fall.

Cultural Instructions from a Professional Grower—"I am of the opinion that it would take 250 lbs. to plant an acre of Garlic. I make my rows two feet apart; make double rows, the garlic about four inches apart in the rows each way. I believe in good soil I can raise between four and five tons per acre. Weeds must never grow in garlic, and it needs plenty of water regularly. If you leave it suffer for either water or cultivation it matures before good size. Garlic planted October 2nd, matured May 7th. The Large White Garlic planted the same time matured in June. The Red Garlic is about half way between."

Market—The demand for garlic is limited but insistent and the price has a wide range. Before 1914 the normal price ranged from six to twelve cents. The fall of that year and during 1915 the price advanced to twenty-five cents per lb. during the fall of 1917 the price dropped to no market at four cents. While the fall of 1919 it advanced to ninety cents.

Bunching Onion

Many think any white onion will do for a bunching onion, but this is not true. Our growers for fancy trade have learned that we have the best strain of seed for this purpose, and our sales amount to thousands of lbs. each year. The picture shows a sample of what our seeds produce. They are just the right shape. (Pkt. 5c) (oz. 35c) (¼ lb. \$1.20) (lb. \$3.50 postpaid).

Chives

This species of onion is extensively used for flavoring. A small spot in the garden planted to Chives will supply a family the year

A & M Okra, or Gumbo

A & M Early Greenpod

A good and healthful vegetable for a summer crop.

Culture—Plant seed from April 1st until Aug. 15th. Plant six to ten inches apart in rows three feet apart. One ounce will plant one hundred feet of row.

We have for a long time endeavored to produce an okra that is earlier than the White Velvet, which has long been the popular market variety. We have succeeded by selection, in producing not only an earlier variety, but a much more tender and prolific okra, and have named it Aggeler & Musser's Early Greenpod.

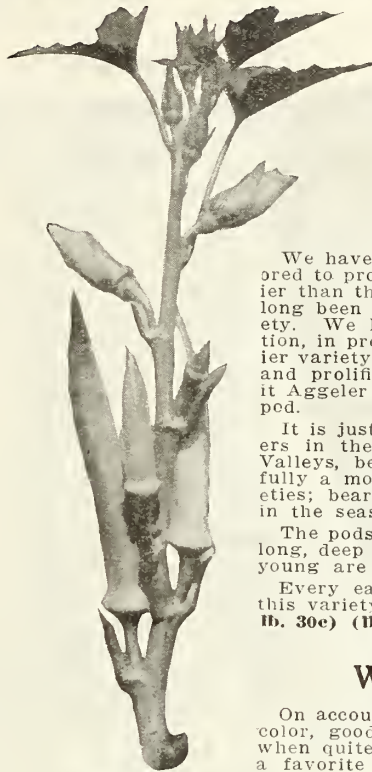
It is just the thing for the truckers in the Coachella and Imperial Valleys, because it matures in April, fully a month ahead of other varieties; bears continuously until late in the season.

The pods are three to four inches long, deep green in color, and when young are absolutely stringless.

Every early trucker should have this variety. (Pkt. 5c) (oz. 10) (¼ lb. 30c) (lb. \$5c) postpaid.

White Velvet

On account of its attractive white color, good flavor and tender pods when quite young, it has long been a favorite variety. (Pkt. 5c) (oz. 10c) (¼ lb. 25c) (lb. 75c) postpaid.



White Velvet

Mammoth Long Pod We have greatly improved the original strain and now its productiveness is simply wonderful, the pods shooting out from the bottom of the stalk within three inches of the ground, and the whole plant is covered with them to the height of a man's head, five to six feet. Pods are an intense green in color, of unusual length, nine or ten inches, tender, and of good flavor. (Pkt. 5c) (oz. 10c) (¼ lb. 25c) (lb. 75c) postpaid.

A & M Parsley

Culture—Same as lettuce. (See page 31.)

Champion Moss Curled Extra dark. Leaves crimped and curled, giving a most beautiful decorative appearance. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

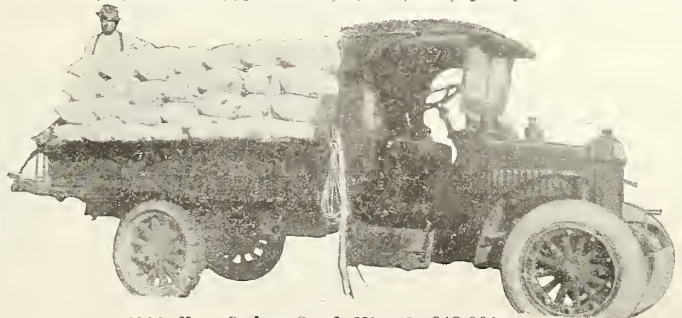
Emerald or Dwarf Extra Curled Leaves tender, beautifully crimped; handsome, bright green color; very ornamental. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Extra Double Curled A good curled variety for garnishing. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Hamburg Turnip Rooted Fleshy vegetable roots for soups, etc. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.



6000 lbs. Onion Sets worth \$1200



4000 lbs. Onion Seed Worth \$12,000

A & M Parsnip

(See Bunch Goods, Page 25)

Our New French Parsnip

Just right for the market gardener. The picture shows the actual size at time of marketing. It grows slightly larger, but it attains this size in ninety days, which is a full month earlier than other varieties. It is crisp and succulent. It at once superseded all other varieties because of its all-round desirability. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Devonshire

This Parsnip was recommended to us by our European growers. Today it is the most popular Parsnip with our market gardeners. It is scarcely more than half as long as the Hollow Crown, but it is often three inches in diameter. Tender, and has an excellent flavor. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Hollow Crown

Has long been a favorite in the family garden on account of its excellent table qualities. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

New French Parsnip
Actual Size

A & M Peanuts

Write for Special Circular

READ—The Peanut is too much neglected. Its various uses are of great economic value. Its value as a food is well-known, but few ranchers realize its value as a soil renovator, adding humus and nitrogen. As hog food, there is nothing better. The straw is rich in food value and may be pastured green, cured as hay or ensilage, and the yield of hay is from four to five tons per acre. It grows on soil that may be too sandy for other crops. Therefore, if you have sandy soil, make it valuable, by planting peanuts.

MARKET—There are a number of factories making Peanut Butter and by-products. It is here you can always find a buyer.

Growing Peanuts in a young Orange Orchard is to get your fertilizer for nothing. Harvest the peanuts and plough under the vines. Inoculate the seed with Westrohae.

Georgia Improved Peanut This variety is much superior to the ordinary Peanut, yielding fewer imperfect pods and combining earliness, productiveness and size; yields on ordinary land about 40 sacks to the acre. (Lb. 40c) prepaid; (100 lbs. market price).

Spanish Peanut

More Profitable Than the Georgia

This is the small Round Peanut used so largely in confectionery lines. One would suppose that on account of the small size it would be unprofitable to grow. But not so. Mr. Moore, residing on the Laguna Ranch, says it is more profitable to the grower than the Georgia because it is enormously prolific, and grows in a compact bunch on a small vine so that they may be stripped easily by pulling the entire stalk through the hand instead of picking one by one. This advantage together with the ready sale at a higher price makes the small Spanish Peanut more profitable than the Georgia. (Pkt. 10c) (½ lb. 25c) (lb. 50c) postpaid.



FIELD CURING

The plants are speared over a stake firmly fastened. The peanuts are in the center with the foliage outside protecting the peanut from injury by the sun.

GARDENING A SCIENCE—NOT ALL IS CHANCE

The vegetable grower is the greatest speculator in the world, particularly in Southern California, and portions here and there throughout the Southwest. He has all United States for a market during the winter months, and all the arid Southwest in the summer time. He must consider well his soil, be an expert in the selection and use of fertilizers, in the selection of his seed suited to his soil, to his climate, to the time of planting and the market for which he intends to grow. He must know to perfection when to irrigate to cultivate, and when not to do so. He must also know when and how to plow. He must not only keep posted as to market conditions and prices, but must figure ahead on these conditions.

When giving consideration to their approximate yields and values, take into account the cost in labor, irrigation, time to mature, and expense of marketing. All these figure in determining the net profit. Then consider too the adaptability of each crop to your soil and the purpose for which the crop is intended. All must be considered when deciding the advisability of planting field crops.

When in doubt buy Aggeler & Musser's seeds, and always consult AGGELER & MUSSER SEED CO. on all the above subjects. And keep this catalog.

READ THIS

We are continually getting letters of inquiry for just such information as is given in this book. We are pleased to get the letters, but if the writers would first look to the subject of their inquiry, they would in many instances save themselves trouble and time.

This Catalog comprises a list of all vegetables and farm seeds offered by us, all of which have been tried and proven to be adapted to climatic conditions of the Southwest and Mexico. BUT always have in mind, each season, even each month requires not only different varieties of seed but different strains of the various varieties. For instance, Los Angeles Market Lettuce is the best of all when planted from August 1st to February 1st, but planted at other times is very inferior, while Marblehead and Iceberg Lettuce are best suited to the Summer months. This applies only to the climate of the Southwest. What is true of lettuce will apply also to beans, melons, onions and many other vegetables.

LIFE ON THE FARM IN SOUTHERN CALIFORNIA



Mr. McMullen of Casa Desierta furnished this picture. He calls it the Piciades (All Stars).

Mr. McMullen of Casa Desierta writes that he and his wife are the only human inhabitants in the town and the only patrons of that postoffice, twenty-five miles from any railroad.

They would not trade their desert home for any palace in the world, nor the companionship of their livestock for the entire population of any city. They are supremely contented.

Likewise, a hundred Mr. Smiths have their happy family in a comfortable home, surrounded with fruit trees, a garden beautiful with vegetables and flowers, a barn yard alive with animals (all pets) and fields of green all about the place and mountains everywhere in the distance. And just to relax for an evening he gets into the auto and goes to a movie, or on a warm afternoon glides away to enjoy the cool ocean breeze.

Mr. Smith would not trade his home for any spot on earth. (See front cover, Mr. Smith's Home.)

Every man or woman in all this glorious southwest can be a Smith or a McMullen in a greater or lesser degree.

This catalog points the way, only study it and get busy. There is no excuse for any intelligent healthy person to fail if they will aim straight and stay with it.

A & M Garden Peas

Write for quantity prices on all varieties

The 1919 crops of garden peas are very short throughout the country. Many varieties have failed entirely so that while we have listed them we have none to offer until the new crop is imported from New Zealand during March.



Stratagem

Admiral

Senator

Dwarf Telephone

Home Garden For the home garden we recommend Nott's Excelsior, to be planted for very early peas, the Tall Telephones for later crop. Any other of the late varieties offered here are good.

Culture—Peas are very susceptible to soil and climate. Within the radius of a few miles from Los Angeles, and in one locality or another peas may be grown every month of the year.

In a thermal zone plant peas from September 1st to February 1st, and in lowlands from January 1st to September 1st. In summer months, from May to September, plant one inch deep in heavy soil and deeper in sandy soil. From December to April plant not more than one inch deep. The object of this is to have the seed deep enough to lie in moist earth, and shallow enough to get warmth from the sun. Never irrigate after planting peas until they come up. Irrigate before planting, but do not plant until the soil is tillable.

Peas will rot in soil that is too wet, especially during the winter months. They will stand a great deal of frost and cold weather until they bloom, but after they bloom a heavy frost will destroy the pods, and if cool enough, will kill the vines. Many planters sow one hundred pounds of seed per acre, but fifty pounds of seed per acre drilled in rows and well cultivated will produce larger pods and more peas per acre; besides, there will be less mildew. Put the rows north and south for winter planting to give them as much sun as possible.

At the first appearance of mildew, spray with the best sulphur obtainable, and do the spraying in the morning. If your soil is sandy it would be well to inoculate the seed with Nitrogen Bacteria.

Gradus The largest of all extra early varieties; medium tall, quality superior to all other varieties. (Pkt. 10c) (lb. 50c) prepaid; (10 lbs. \$4.00) f. o. b. here. Write for quantity price.

Dwarf Gray Sugar (Edible pods.) Of ordinary yielding qualities, and unsurpassed as an edible-pod variety. (Pkt. 10c) (lb. 50c) prepaid.

American Wonder The earliest of all wrinkled peas. Of dwarf habit, growing from 9 to 11 inches high, and producing a profusion of good-sized and well-filled pods of the finest flavor. (Pkt. 10c) (lb. 50c) prepaid; (10 lbs. \$4.00) f. o. b. here. Write for quantity price.

Premium Gem A dwarf variety very prolific and sweet. (Pkt. 10c) (lb. 50c) prepaid; (10 lbs. \$4.00) f. o. b. here. Write for quantity price.

Nott's Excelsior Although a few days later than the American Wonder, the pods will average fully one-third larger, containing 6 to 8 large peas, so closely packed together that they become flattened. (Pkt. 10c) (lb. 50c) prepaid; (10 lbs. \$4.00) f. o. b. here. Write for quantity price.

Admiral This excellent variety was introduced locally two years ago with only a limited quantity to offer. Every grower who was fortunate enough to get some was extremely pleased at his good fortune. Has dark green foliage, profusely branching vines bearing abundantly of large, well-filled pods of delicious sweet peas that mature in twelve weeks from planting. The picture is of pods grown on our trial grounds, and shows the shape and actual size of the pod. It has had two years' trial and every gardener that once grows it wants it again. That is the best recommendation. (Pkt. 10c) (lb. 50c) prepaid; (10 lbs. \$4.00) f. o. b. here.

Tall Telephone Vines vigorous, growing about 4 feet high, with large, coarse, light-colored leaves and producing an abundance of very large pods filled with immense peas which are tender, sweet and of excellent flavor. Throughout the South and by some growers in California it is preferred to all other varieties because of the hardiness of the vines and its large, well-filled pods, making it one of the best varieties to grow during the winter months for shipping. (Pkt. 10c) (lb. 50c) prepaid; (10 lbs. \$4.00) f. o. b. here. Write for quantity price.

Stratagem A favorite in the San Francisco markets. The pods are of a dark green color and remain firm several days after picking. A very strong grower; very prolific, pods of good size and well filled. Vines stand upright about 2½ feet; an excellent variety. (Pkt. 10c) (lb. 50c) prepaid; (10 lbs. \$4.00) f. o. b. here.

Yorkshire Hero A very popular market pea in this section. Abundant cropper and excellent in quality. Height 2½ feet. (Pkt. 10c) (½ lb. 30c) (lb. 50c) prepaid; (10 lbs. \$4.00) f. o. b. here. Write for quantity price.

Senator This variety has become very popular with market gardeners and shippers, whether your acreage is small or large you need not hesitate to plant the Senator. The pods are of good size and the peas are crowded in the pod. It is similar to the well known Admiral. (Pkt. 10c) (lb. 50c) prepaid; (10 lbs. \$4.00) f. o. b. here.

PAUL THOMASON, California

Your catalog interests me very much, and I think the state ought to pay for the printing of it as it is certainly a great benefit to the state.

A & M Peppers

Culture—For early green peppers, sow seed in hot beds in December and January. Transplant as soon as weather and soil in your locality will permit. For main crop sow seed in February, March and April, in hot bed. Pepper seed needs the heat of a hot bed to germinate it during these months. For fall and winter crop sow seed in out-door beds well prepared, during May and June. Winter crops can be grown in places that are entirely frostless.

Many large growers are now planting seed in the fields and thinning out. This does away with the expensive and tedious method of raising plants and transplanting, and is proving satisfactory.

Peppers The growing, drying, canning and shipping of peppers is now one of California's big industries, according to Mr. Weaver of Johannes Bros. The acreage of 1919 was about 2500 to Mexican and 1000 to Anaheim Chilis. This means about \$750,000 to the growers and a like amount to the dryer and shipper.

Add to this about 2000 acres of Pimientos which brought to the grower \$500,000 and a like amount to the canner.

Also add 1000 acres planted to Chinese Giant sold only in the green state, brings to the grower from \$200 to \$500 per acre, according to the time of marketing. This adds \$500,000 to the total of about \$3,000,000 exclusive of a profit to the retailer.

Much of this was made possible by our breeding up and introducing the Anaheim Chili and the Pimiento. A few years ago, the acreage to Anaheim Chili was about 25 to 1 of Mexican Chili. Now it is about 3 to 1 in favor of the Mexican. This is brought about by the chaotic conditions in Mexico, cutting off the supply from there and Southwestern California climatic conditions being ideal for growing all kinds of peppers. Large dry houses were constructed and mills were erected for grinding the dried chili for domestic purposes and shipped in car lots to every distributing point in America.

Large canneries are canning the Chili and Pimiento exclusively and likewise supplying the world's markets.

This further emphasizes the statement that Wide-Awake Seedsmen are valuable upbuilders in their respective communities.

Anaheim Chili Pepper

Anaheim Chili is desired above all others for culinary use because of its agreeable pungency. Other pungent varieties are intolerable, not so with the Anaheim Chili. That is what makes it the best seller on the market and the best pungent variety for canning.

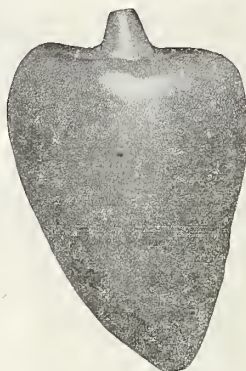
(Pkt. 5c) (oz. 60c) (¼ lb. \$1.75) (lb. \$5.00).

COMPLIMENTARY

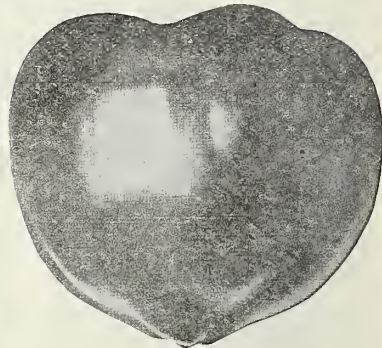
MRS. M. E. IWO, California

My ranch (which is small and on which I raise truck garden) is situated in Mill Creek Canyon three and one-half miles this side of Forest home. I had a stand by the roadside under an apple tree. During July and August I sold almost \$100 worth of vegetables and fruit during that time. Am sending a small order now taken from an old catalog. Would like you to send me your 1918 catalog. I am an old lady in my 64th year but I like to raise vegetables.

PIMIENTO



The Pimiento as we imported it in 1906.



The Pimiento as we improved it.

It is Now a Big Money Maker

OUR SEED IS PURE. Owing to the large acreage planted to Chili, the Pimiento growers who planted seed of their own growing found their peppers badly hybridized with chili, resulting in a product that was ill-shaped and pungent, therefore could not be sold on the market nor to the canner. Our seed is pure and true to type, as one large grower testified by ordering his seed from us, discarding his own. He said: "I shall hereafter depend upon you for my seed, because it is the purest I have ever planted."

This pepper was introduced by us in 1911. It has already become one of California's many staples, far out-ranking the Anaheim Chili as a canned product. One cannery used the entire crop from 600 acres of Pimientos. This is because of its lack of pungency and its firm, thick fleshiness, which permits of its being scalded and peeled. It should be grown largely in the family garden, because it is delicious with salads or stuffed, and a healthy food to eat when ripe as you would eat an apple.

Every home garden should have a row of this Pimiento. For salad, parboil it to remove the skin. Stuffed and baked it is far superior to all other peppers. (Pkt. 5c) (oz. 60c) (¼ lb. \$2.00) (lb. \$6.00) postpaid.

Mexican Chili

The Mexican Chili has out-classed the Anaheim Chili by many hundreds of acres. We were taught that people living in hot climates were fond of hot peppers, but it seems that it was only a local habit and that climate had nothing to do with it. The North and East have acquired the habit and our shippers are having difficulty getting growers to keep pace with the market.

If you have rich sandy loam with irrigation available, there is big money in growing Mexican Chilis at present prices.

If you contemplate growing Chilis consult us about it.

The Mexican Chili is in a class by itself, on account of its extreme pungency. It is not canned, but is used almost exclusively for grinding and sold as cayenne, the trade of which is surprising. (Pkt. 5c) (oz. 45c) (¼ lb. \$1.35) (lb. \$4.00) postpaid.

Our seed is pure and taken from selected peppers grown far from other varieties.



Mexican Chili Big Money Maker

It has been proved possible again and again in this vicinity to keep a family of five provided with fresh vegetables the year around on an ordinary city lot. It only requires real interest and reasonable attention.

An amateur may at once become an expert with the aid of this catalog and A. & M. Seeds.

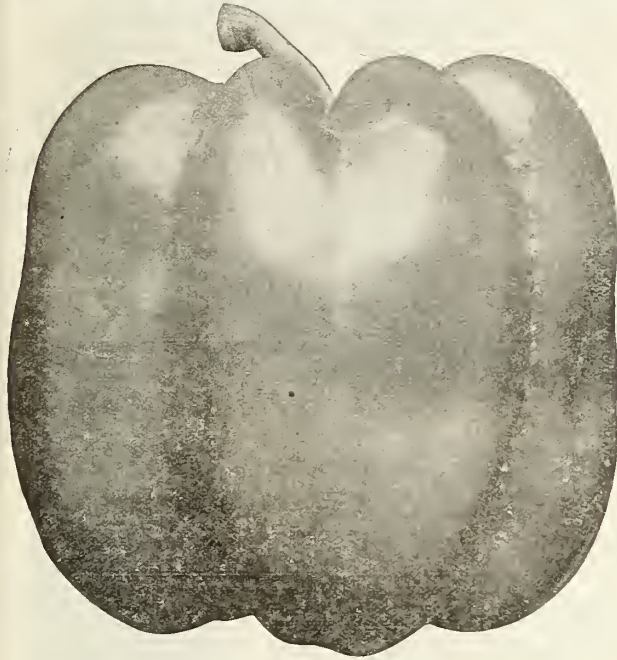
THE SPACE in this catalog is devoted to hints and information useful to the grower; not "Literary rainbows" about seeds of doubtful merit intended for the "Rainbow Chaser." Our seeds are just what is claimed for them.

Because this catalog is intended to be of the greatest benefit to the grower.

Because our seeds are selected to give the best results when grown according to instructions in the catalog.

PEPPERS—(Continued)

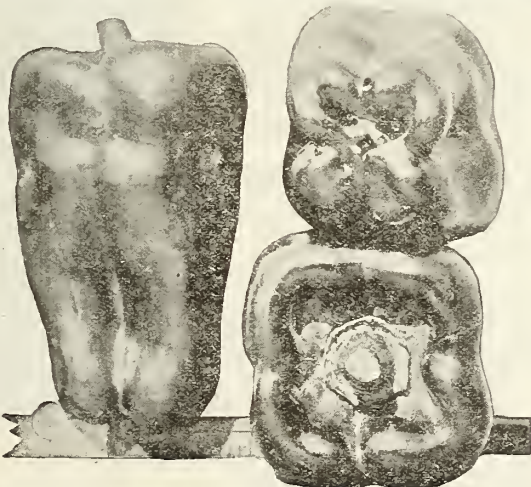
Chinese Giant A very large pepper of the Bull Nose type, often growing to five inches in diameter. This is the variety grown so extensively in frostless sections for the winter trade, when the grower gets as much as 20c per pound for the green pepper. One grower claims that his returns from five acres was \$4500. (Pkt. 10c) (oz. 80c) (¼ lb. \$2.65) (lb. \$8.00) postpaid.



Chinese Giant Pepper

MARKET—For the market gardener the Chinese Giant is the big money-maker. There are instances,—in the foot-hill sections where they can be grown throughout the winter,—where the grower sold \$900.00 worth from one acre, but as a mid-summer crop it is profitable because of its enormous production.

A & M Perfect Ruby King Ordinarily they grow about four inches long by 3 to 4 inches thick. Plant is of sturdy, bushy habit, and each one produces handsome fruit. This pepper is popular because of its solid, thick meat and mild flavor. (Pkt. 10c) (oz. 80c) (¼ lb. \$2.65) (lb. \$8.00) postpaid.



A & M Perfect Ruby King

Bell or Bull Nose Do not confuse this with the Chinese Giant. It is similar in shape but scarcely more than half as large. It is much more prolific and a very desirable variety for the home garden. (Pkt. 10c) (oz. 80c) (¼ lb. \$2.65) (lb. \$8.00) postpaid.

Floral Gem This beautiful yellow pepper became popular two years ago. It is ¾ inches in diameter, 1½ inches long, delightfully pungent with a flavor quite distinct from other peppers, and commands an independent price. The supply has not yet caught up with the ever-increasing demand. (Pkt. 10c) (oz. 80c).

Small Chili This small pepper is ½ inch in diameter and two to three inches long. Is very pungent and marketed when quite green, although it is also sold when it has become red. It is an old time favorite and finds a market with canners and at stores catering to the foreign trade. (Pkt. 10c) (oz. 80c).

Cherry A very pungent pepper round as a cherry about one inch in diameter, marketed when green. Used largely in pickling and by the foreign trade. There is a profit to the person who will specialize on this and other small pungent peppers. (Pkt. 10c) (oz. 80c).

Cayenne A long, slim pepper, rather pointed, and when ripe a bright red color. Extremely pungent. (Pkt. 10c) (oz. 80c) (¼ lb. \$2.65) (lb. \$8.00) postpaid.

Tobasco The plants develop into large bushes, bearing profusely the little bright peppers in sprays. A mature pepper measures about one inch in length. These peppers are extremely pungent. (Pkt. 10c) (oz. 80c) postpaid.



The Old Slow Way of Sun Drying Chilis

The Royal Pepper



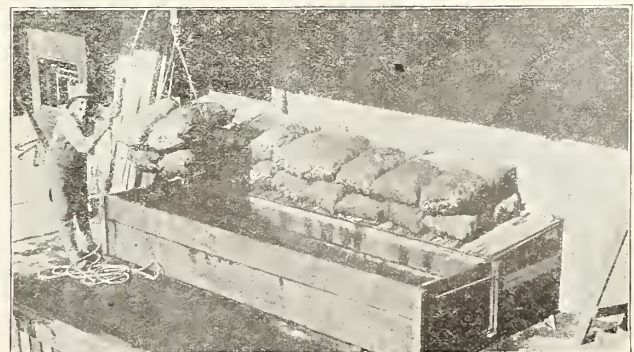
The Royal Pepper

This is an improvement over the Ruby King and the Chinese Giant. While retaining the same delicious flavor of the sweet peppers it is thicker meat, so much so that it may be canned as is the pimiento. It is particularly desirable for the table as stuffed pepper, because of the delicious flavor together with the thickness of rind and cup-like shape.

It is another of the new things that we tried out before recommending it to our trade.

Mr. Harry Bailey of Los Angeles, who is a professional pepper grower, reports to us that "It is a good pepper all right. I believe better than the Chinese Giant." Such a recommendation from such a source is worthy of consideration.

To gardeners we say do not hesitate because a crate of Royal Peppers will weigh as much as a crate and a half of Chinese Giant. (Pkt. 10c) (oz. 80c) (¼ lb. \$2.65) (lb. \$8.00).



POTATO VAT

Treating Potatoes by Dipping Them in Corrosive Sublimite

A & M

Potatoes



Typical White Rose

Essential Factors in Successful Potato Growing

The best results cannot be obtained without the **best seed**. Over thirty per cent increase has been obtained through the use of treated seed when grown by the side of what was thought to be extra good seed stock but not treated.

Plow deeply, 9 to 12 inches.

Treat seed stock before cutting. The very best seed may have traces of one or more of the many diseases to which potatoes are subject. It is, therefore, advisable to soak seed potatoes in a solution which will kill whatever disease may be lurking on the outside of the tubers. Make this solution by dissolving **four ounces of corrosive sublimate** in about two quarts of hot water (be sure it is thoroughly dissolved) in a glass jar and then add to thirty gallons of cold water in wooden vessels. A barrel or wooden tank makes a good receptacle for this purpose. Place the sacks of potatoes in this solution and leave one and one-half hours, then drain and, if the potatoes are not to be cut immediately spread out to dry. Use the same solution for only four or five lots as the strength becomes weaker the more it is used. This solution is poisonous and should be handled with care and kept where animals may not drink it. Treated potatoes should also be kept away from stock.

Cut potatoes to about two eyes.

Plant four to five inches deep, 14 inches between pieces, in rows 36 inches apart.

If potatoes follow alfalfa or Melilotus good yields can usually be obtained without the use of commercial fertilizer; but on most soils the use of barnyard manure thoroughly worked into the soil, or commercial fertilizer will be found profitable.

Keep soil moist at all times. Do not judge moisture by appearance of the potato plants as when the plants become a very dark green or begin to turn yellow it is then too late to apply water for best results; and potatoes are likely to become rough and knobby.

Turn earth up toward plants a little higher at each cultivation; until at last cultivation the ridges are six to ten inches high and broad at top so that tubers will be kept cool and free from tuber moth infection.

POTATO INSPECTION—All potatoes intended for seed purposes must be inspected by the County Horticultural authorities before they may be received and again before they may be shipped out. This is a great protection to the grower.

MORE AND BETTER POTATOES

We realize that Southern California is not producing potatoes in quantity nor quality equal to other recognized potato growing sections nor can the reason be assigned to any soil and climatic conditions prevailing here. But it has been clearly proven by demonstration that clean seed will produce **more and better potatoes**. Therefore the above slogan has been sent forth. On account of the almost universal presence in the soil of *Scab* and *Rhizoctonia* it is necessary to treat all seed to corrosive sublimate in order to destroy any germs of disease that may exist.

Pursuant to our policy of doing everything possible to give our customers the best and cleanest seed possible we have installed a large vat in which all potato seed will be so treated, when requested, at a small additional charge, thereby insuring more and better potatoes for Southern California. (See Page 45.)

Write Department of Agriculture, Washington, D. C., for Bulletin No. 533, entitled "Seed Potatoes and How to Produce Them."

Essential Factors in Successful Potato Growing

All California is awakening to the necessity for more and better potatoes. Therefore at a meeting of potato growers held at Burbank November 3rd of this year, under the direction of the Los Angeles County farm advisor Mr. Hodgson. A committee was appointed to launch a state wide agitation for more and better potatoes.

THE FIRST REQUISITE

The first requisite is better seed. The committee decided that to accomplish this it will be necessary to have a dependable source of supply for certified seed grown in certain recognized sections where the best seed may be obtained.

CERTIFIED SEED—WHAT IT MEANS

The State Legislature enacted a bill (No. 1573) entitled "an act to establish a standard for California certified seed potatoes, making a violation of this act a misdemeanor." Certified seed means that at the request of the grower, an official of the state will inspect the crop three times—first during the blossom season, second just before maturing, and third after they have been harvested. If true to type and free from disease, the grower will be given a certificate for each sack, and the potatoes may be sold as certified seed.

A. & M. SEED CO. HAVE PIONEERED THIS MOVE

For years we have anticipated this move. We have grown certified seed, we have treated our seed, and we have imported seed from the best seed growing sections.

We have met with many discouragements. Certified seed

is expensive, the grower cannot afford to do the necessary work, and discard a large percent of his crop in addition to the cost of inspection. Many planters will not pay this increased cost above the already high price of commercial potatoes, preferring to buy of commission houses, potatoes from unknown source.

FOR THIS SPRING PLANTING

We have several thousand sacks grown from certified seed, bred up by several years selection by an expert grower who started five years ago to produce better seed.

We do not hesitate to say that this lot of seed is the best that will be offered this spring from any source.

The Varieties We Offer

WHITE ROSE grown from certified seed.
WHITE ROSE grown in Oregon from our seed treated and inspected here and in Oregon.

WHITE ROSE from selected local fields.

BRITISH QUEEN from selected fields grown in Oregon.

AMERICAN WONDER grown in Yolo Co. under contract, from clean seed bred up by years of selection, and grown by an expert potato grower.

EARLY RED ROSE from Oregon.

BURBANK from Oregon.

IRISH COBLER—Imported from the East.

WRITE US for detailed information concerning the above varieties. Always be sure to consult us concerning seed when you are contemplating planting potatoes.

Our Mr. Aggeler is a thorough potato expert. It will cost you nothing to consult him and may save you from making costly mistakes.

A & M Sweet Potatoes

The Sweet Potato industry has become one of the big things in Central and Southern California. At Turlock, Calif., there has just been completed the largest Sweet Potato curing plant in the world. You can readily understand what it means to the grower when he can store the better part of his crop to be sold in March, April and May at the higher price.

The handling of Sweet Potatoes for seed has been unsatisfactory to our customers as well as to ourselves on account of the perishable nature of sweet potatoes. However, if you wish us to secure sweet potatoes for seed purposes we will do so and send them to you at your risk.

Check or cash must accompany order.
We have no seed of any Yams or Red Jersey, only Plants, for sale only at the store.

Sweet Potato Plants We will aim to have in large quantity sufficient plants to meet all demands, but our beds do not always respond to the usual culture, the seasons are not always favorable. Planters in warmer districts are impatient to have plants earlier than we can furnish them.

Upon receipt of your order we will advise you approximately when the order will be filled.

Los Angeles and Orange County should co-operate to build a large Sweet Potato curing plant.

Then, too, our growers should plant another variety besides the small yellow Jersey which is very satisfactory.

The Nancy Hall

The Nancy Hall has proven to be both, a better potato and a better cropper even under unfavorable conditions of soil.

Mr. Geo. M. Reed of Van Nuys sold 740 lbs. off of 1/26 of an acre at 6 cents per lb., bringing \$43.59, or \$1132.84 per acre. But he sold his entire remaining crop to the proprietor of a cafeteria at 4 cents, while other Sweet Potatoes were selling at 3 cents. This speaks well for the quality of the Nancy Hall. Besides it will produce a crop of large potatoes on soil so poor other crops will fail. The vines average four feet long which is an additional advantage. The potato itself is short and chunky, as the picture shows it to be.

Porto Rica Yam

One season's experience with the Porto Rico Yam has proven it to be very desirable for a home garden but not profitable for the grower on large acreage. It has not proven to be a good seller.

However they are large producers, very early and good keepers. Maybe the local market needs to be educated.

PLANTS BY THE MILLION

The demand for plants last season was far beyond all calculation and found us unprepared. Another embarrassing feature was the earliness of the demand and the unusual lateness of our beds. We will endeavor to overcome all these handicaps this coming season.

Nancy Hall

PRICE OF PLANTS POSTPAID

	100	1000	
Yellow Jersey	\$1.25	\$6.00	Write
Large White	1.50	8.00	for
Nancy Hall	1.50	8.00	Quantity
Porto Rico	1.50	8.00	Price.
Red Jersey	1.50	8.00	
Georgia Yam	1.50	8.00	

COMPLIMENTARY

A. W. WESTCOTT, California

I have your catalog for 1919 and will say it's a dandy, the best seed catalog I have ever seen. I especially like the attention you give to Alkali resistant plants, you are pioneering on a subject of growing importance to the west.



Georgia Yam

NO EXCUSE FOR INEFFICIENCY ON THE FARM
See list of Agricultural Books page 16.



Potato Growers' Convention

Farmers attending the Potato growers' convention last November. After inspecting several fields of potatoes, they met in a hall at Burbank, Cal., and deliberated upon the necessity for clean potato seed.

The above convention is only one of a hundred or more conducted by the County Farm Advisor, Mr. Hodgson, upon every subject pertaining to agriculture.

The conventions are attended by experts who give practical demonstrations of the subject under discussion.

Therefore do not fail to attend any of these conventions in which you are interested.

Bear in mind also that the information to be found in this seed catalog is a fundamental and important part of your agricultural education.

The Seed Catalog is your primer in agriculture, your first aid in the proper selection of your seed.

With Agriculture taught in the elementary schools, the County Farm Advisor at your call, your state college offering free a six weeks course in agriculture, or a course in any particular branch of agriculture. Or if you cannot spare the time to go to college, the education will come to you by correspondence.

Send to the University of California, College of Agriculture, Berkeley, California. Ask for circular No. 113 entitled Correspondence Courses in Agriculture, by W. G. Hamenl.

This circular contains a list of Bulletins and Circulars on other subjects.

When puzzled, see your County Farm Advisor at their office, 357 Court House, Los Angeles, or phone Main 2300 and ask for County Farm Bureau.

The coming generation will be more proficient because there is no excuse for inefficiency on the farm.



Mr. Geo. M. Reed Marketed 10 Tons of Nancy Hall Sweet Potatoes from this Acre

A & M Pumpkins



Large Cheese or Kentucky Field

For stock only, plant Mammoth Tours, California Mammoth, Estampes, Cushaw, Kentucky Field or Cheese, Sandwich Island, Pot Iron and Connecticut Field.

For the canneries, plant Estampes, Kentucky Field or Cheese, also Boston Marrow and Hubbard Squash.

For the home, plant Boston Pie.

Culture—Pumpkins delight in red, sandy soil that is perpetually moist,—the soil that retains moisture by the dry farming method, because pumpkins do not want too much water, and to flood them would destroy them, so when irrigating make the furrows nearly as far from the hill as the tip of the vine, and when the vines intersect, run the water through the middle of the row. Plant the seeds every 8 or 10 feet, allowing only one plant to remain.

See Page 33—Deep Planting.

Estampes We have the purest stock seed from which to grow this pumpkin. It is the heaviest pumpkin for its size that we know of; 100 pounds is not an unusual size for them to attain. It is the canner's favorite because of its thick, deep red flesh and the fine sweet flavor. It is without exception the best for dairy stock, and only the scarcity of the seed has prevented it from being more widely known. (Pkt. 5c) (¼ lb. 50c) (lb. \$1.50) postpaid.

An Estampes Pumpkin, weighing 131 lbs., was grown on the ranch of Mr. Hathaway. His boys are active intelligent farmers and dairymen, and give us the information that when they feed other pumpkins the cows eat them because they have to, and the milk contains only 3% butter-fat, but when they feed the Estampes, the cows are just crazy to get at them, and the milk contains 5% butter-fat. "Just to try it out, we again fed other pumpkins and the butter-fat fell to 3%."



Sugar, or Boston Pie

Sugar or Boston Pie A small handsome variety, and very popular. The skin is a deep orange yellow; flesh fine grained and sweet in taste. Famous in Boston as a pie pumpkin. It sells better on our local market than any other variety, except the Jack o' Lantern at Hallowe'en time. (Pkt. 5c) (¼ lb. 35c) (lb. \$1.00) postpaid.

Mammoth Tours Is one of our best stock pumpkins, and a most prolific yielder on good soil. It produces a pumpkin at every other joint that will average fifty pounds, more or less, according to the richness of the soil. It is a very popular pumpkin where it is better known. Mr. Short, of the San Fernando Valley, says: "There is simply nothing like it for bearing." Mr. Richardson, of the San Gabriel Valley, says about the same. (Pkt. 5c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Cushaw or Crookneck This excellent pumpkin ought to be planted more largely. It is the heaviest pumpkin for its size because of the small seed cavity. It is excellent for pies, and yields enormously. (Pkt. 5c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Sandwich Island The most popular pumpkin in Ventura County. It is as hardy as a citron. A good one to plant where water is scarce. (Pkt. 5½c) (¼ lb. 35c) (lb. \$1.00) postpaid.

Kentucky Field or Large Cheese This variety is locally called Sweet Pumpkin, and is grown more than any other of its kind for stock, because it is a good keeper, notwithstanding it has a soft shell. It is fleshy and very sweet; also good for pie, and is largely used for canning. On one large ranch in the San Fernando Valley there was planted a large acreage to nearly all the popular varieties; this one was unaffected by the hot sun, and remained in perfect condition while other varieties were sun-burned and decayed quickly. (Pkt. 5c) (¼ lb. 25c) (lb. 75c) postpaid.

Japanese Pie Pumpkin (Pkt. 5c) (oz. 10c) (¼ lb. 35c) (lb. \$1.00) postpaid.

California Mammoth This is the large pumpkin so well known locally. As many as 20 tons have been taken from one acre. It not infrequently attains a weight of 200 pounds. (Pkt. 5c) (¼ lb. 25c) (lb. 75c) postpaid.



Connecticut Field (Jack-o'-Lantern)

Connecticut Field (The Jack-o'-Lantern)—This is the pumpkin planted largely for the Hallowe'en and Thanksgiving trade, at which time they bring \$20.00 per ton, and two cents per pound at retail store. Twenty tons to the acre is no unusual yield. If the land has been manured liberally a full crop can be grown among corn. It is a most excellent keeper, and will be sure wealth to all who grow and feed it liberally. (Pkt. 5c) (¼ lb. 30c) (lb. 85c) postpaid.

Iron Clad This is the leading stock pumpkin in Australia. It has a silver gray color, thick meated heavy pumpkin with an average weight above twenty-five pounds but frequently weighing 75 lbs. Our seed was imported from Australia. It is pure.

Mr. Soderberg of Van Nuys, who grew our seed, says: "I never saw a pumpkin grow such a vine. It ought to be planted twenty feet apart, even then the foliage would shade every pumpkin."

(Pkt 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50).

MONEY IN GROWING SQUASH AND PUMPKINS.—The canners consume enormous quantities. They use principally the Estampes and Large Cheese pumpkins, paying about \$6.00 per ton. Next to the canners are the bakers, who use Hubbard Squash and Small Sugar, paying about \$20.00 to \$30.00 per ton.

PLANT PUMPKINS AND CITRON FOR THE DAIRYMEN

If you have an idle space of rich sandy loam plant pumpkins any time from May 1st to August 15th.

If you have any soil too sandy to grow the usual crops, plant the large green striped citron, you will be sure of a big crop.

A & M Radish

Culture—Seed may be sown the year round in California. Radishes thrive best in light, sandy loam, made rich with manure. Sow in drills, 10 inches apart. An ounce of seed will sow a hundred feet of row, 10 pounds to the acre.

Early Scarlet Turnip

One of the earliest and best sorts for forcing; its color is very handsome; flavor very mild, crisp and juicy; stands a great amount of heat without becoming pithy. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

French Breakfast

A splendid variety, medium-sized, olive-shaped, very crisp and tender; of a beautiful scarlet color. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Epicure Radish

Ready for the table within three weeks; always crisp, a delightful relish. The small round red and white radishes make a pretty showing. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.

Chartiers A distinct, exceedingly handsome and attractive sort; color of top scarlet rose, shading into pure waxy white at the tip. Attains a large size before it becomes unfit for the table. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Early Long Scarlet

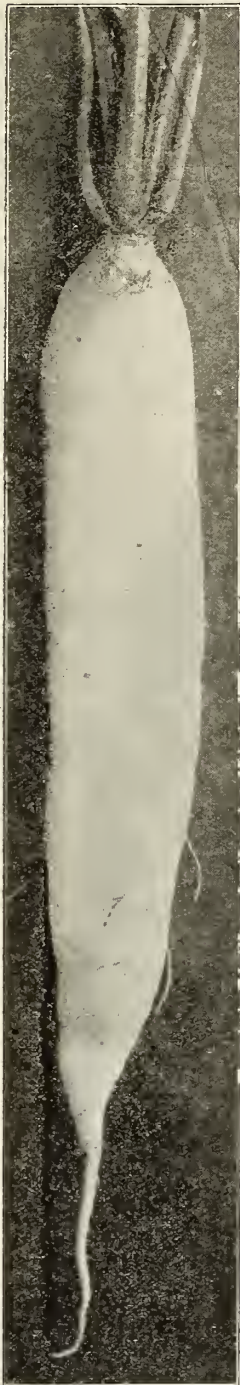
Very brittle and crisp; color a bright scarlet; small top. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Long Black Spanish

A delicious, crisp winter radish. It sells well at the market. (Pkt. 5c) (oz. 10c) (¼ lb. 25c) (lb. 75c) postpaid.

Large White Chinese

This is a winter radish of deliciously sweet flavor; can be eaten as a turnip as it is without stringency. The Chinamen use this variety exclusively. (Pkt. 5c) (oz. 20c) (¼ lb. 60c) (lb. \$1.75) postpaid.



Long White Icicle

Stump Rooted Half Long Scarlet

This variety should be more popular because it is just the right size for table use, not too large, never pithy, but always crisp and sweet. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.



China Rose

When you contemplate buying plants make use of our call counter (see page 3). Order by letter or phone and they will be ready when you call for them.



Scarlet Turnip White Tip Radish

White Tipped Scarlet Turnip

An early variety of medium size and excellent flavor, and of a very handsome appearance. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Long White Icicle For the home garden we consider this a most excellent table variety. Its extreme earliness, beautiful pure white appearance, excellent flavor and crispness should make it a favorite everywhere. (Pkt. 5c) (oz. 20c) (¼ lb. 60c) (lb. \$1.75) postpaid.

Crimson Giant Turnip

A variety extraordinary in that, while growing to an unusually large size, it is always tender, crisp and of mild flavor. It remains in perfect condition a remarkably long time, and unlike other forcing varieties, does not become pithy even when twice their size in diameter; root turnip shaped; color a beautiful crimson carmine! flesh firm, crisp and tender. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

All Season Radish A new one from Japan called "Tokishiraza," meaning all-the-year. It is a very large, long, snow-white radish; deeply rooted, does not extend above the soil, hence it always is tender and crisp and has a delicious flavor. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.

Japanese Summer Radish

This radish was introduced here by the Japanese several years ago. Its beautiful white color and mammoth size attracts great attention. It is very tender and the flavor is exceedingly mild. It attains perfection in California, growing twenty-six inches in length and three inches in diameter. It is a profitable radish to grow, as it sells readily and is relished by all. (Pkt. 5c) (oz. 25c) (¼ lb. 85c) (lb. \$2.50) postpaid.

California Mammoth

Pure white; the flesh is tender, sweet and crisp, keeps well. Plant from September 1st to March. (Pkt. 5c) (oz. 20c) (¼ lb. 60c) (lb. \$1.75) postpaid.

Round Black Spanish

Skin black, flesh white, of firm texture. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

China Rose A delicious radish, crisp, with little tendency to become pithy. Skin is a beautiful deep scarlet and flesh pure white. It is a good seller and is in great demand by the vegetable peddlers. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.



All Season



Chartier

A & M Horseradish

GROW MORE HORSERADISH

Big Money Maker

The local supply is far below the demand. This condition should not exist, because it is a profitable crop. One grower realized \$1100.00 off of two acres. When asked why he discontinued growing it, he replied: "I have not the right soil. It requires rich, sandy loam, frequent irrigation, but it must be well drained so that the soil does not remain muddy or sour. Then, too, there is so much disease or blight prevalent that one must get a clean start and keep clean by changing places as soon as the soil is infected."



One dozen will supply enough for the use of one family. It requires about 10,000 roots to plant an acre.

Prepare the ground as you would for potatoes; stick each root upright into the bottom of the furrow 12 inches apart, and 3 inches deep, or drop the roots and cover as potatoes.

The Bohemian Variety is decidedly a more rapid grower than the common. We buy our roots from the far East to avoid the disease so prevalent here. (12 roots 25c) (100 roots \$1.00) postpaid; (1000 roots \$8.00) f. o. b. here.

A. Curtis writes: "I found the horseradish disease comes from planting old crowns. In my field old crowns that were planted showed disease but those planted from roots were free."

A & M Roselle



Roselle Pods
From Which Jelly is Made

Culture—Sow seed early in April in the field, four feet apart, in rows six feet apart. Cultivate as Okra. There is an early and a late Roselle. Be sure to get the early variety because the frost is almost sure to destroy the late variety before it matures. We offer only the early variety.

It is an annual plant that has been sufficiently tested to indicate its great value and to warrant more extended cultivation. The calyx surrounding the seed pod is used as soon as the flower drops for making jelly and jam. The jelly is superior to guava or currant, and is labeled as "Queensland Jelly," is shipped from Australia to all parts of Europe. It is easily grown from seed if planted after the ground is warm; grows rapidly, resists drouth and is very ornamental. Every home garden should have a row of this ornamental and useful plant. (Pkt. 10c) (oz. 75c) (¼ lb. \$2.50) (lb. \$7.50 postpaid).

NOTE—Our local growers are not up with other localities in advertising and educating the public to the uses of Roselle. The local

demand has never yet been fully supplied, and only a few people ever heard of it. Someone ought to get busy.

We have been advised by a lady from Texas, also one from Cuba, to remove the seed pod, and the jelly is thus greatly improved. The calyx is an excellent substitute for cranberry sauce or pie.

Having received numerous inquiries how to use Roselle, we have decided to insert the answer here. Pick the pods that grow at the axil of each leaf. Boil them until soft and strain through a cloth. Add ½ pint of sugar and the juice of ¼ of a lemon to each pint of juice, and boil again until it jells.

The pods are ready for use in September. We are advised that excellent jelly may be made from the leaves. Therefore it will not be necessary to wait for the pods to mature.

Paul Nye writes from Turlock, December 10, 1917: "I planted two acres of Roselle. I have made 800 pounds of jelly and have juice to make 2500 pounds more. I want your early variety, it gives me a longer season for harvesting."

Put Roselle Pods in water to cover; let stand over night. In the morning strain, boil to one-half and can; use when needed as lemon juice.

A & M Rhubarb

Culture—Sow the seed any time from February 1st until July 1st, in drills two feet apart, in order that you may cultivate with a horse cultivator. Within five months after sowing the seed, the Wagner's Giant variety will be large enough to market, even though the roots are not larger than your thumb. Transplant at any time when the roots are large enough. Rhubarb requires a rich sandy loam, well drained. Never flood the crown nor bury it with soil. Therefore plant it on ridges or on the sides of an irrigating ditch. In our hot climate partial shading is beneficial. If you can do so, plant it in an orchard, setting the roots three feet apart, but if in a sunny place, set the roots 18 inches apart, that the leaves of one plant will shade the crown of another.

Wagner's Giant variety we have yet offered. It is displayed at the market places in apple boxes, and the boxes are barely long enough to accommodate the large, thick stems that will average one-half pound each, often weighing more than a pound. It is remarkably early, bearing large stems within five months from planting the seed, and grows nearly the entire year. The stems are so tender that they do not need peeling. It is not as red as the Winter Crimson, but of good color. (Pkt. 20c) (oz. \$1.20) (¼ lb. \$4.00) (lb. \$12.00) postpaid.



Wagner's Giant

RHUBARB ROOTS

Wagner's Giant Seedling—(15c each) (\$1.00 per dozen)

A & M Salsify

Culture—Sow the seed in the spring in drills one foot apart and one inch deep, thinning out plants to four inches. It succeeds best in light, well-enriched soil. One ounce of seed for 50 feet of drill.

Mammoth Sandwich Island A large and superior variety. Mild and delicately flavored. (Pkt. 5c) (oz. 30c) (¼ lb. 90c) (lb. \$2.75) postpaid.

A & M Sorrel

Broad Leaved This is boiled and served like spinach, also delicious soup is made with it, and it possesses a very fine flavor. As the hot sun tends to increase its acidity, a northern exposure is advisable. It should be sown in drills 18 inches apart. It is hardy but the roots should be divided every four years. (Pkt. 5c) (oz. 25c) (¼ lb. 75c) (lb. \$2.25) postpaid.

A & M Spinach

Spinach cultivation will be carried on much more extensively in California in the future, according to a bulletin just issued by Stanley S. Rogers of the University of California. This will be due to the great demand for this crop for canning purposes, and for shipping green.

"Spinach is well adapted to a large area in California," Professor Rogers continues, "and may be grown wherever the conditions are favorable for the production of vegetables. Under normal conditions when growing spinach in large tracts, the cost varies from \$25 to \$35 per acre, exclusive of land values or fertilizers. The yield per acre varies from three to five tons, with an average production of four tons. (As much as 8 tons have been grown.) When selling to the cannery the customary price is \$25 per ton.

"Spinach is best adapted to a rich, light loam and is not a satisfactory crop to grow on soils of poor quality or those which will not retain moisture. The climate requirements of this crop are very exacting. The plants will stand without injury a relatively low degree of temperature but are seriously injured by heat. Planting early in the fall and late in the spring should be avoided since the plants will not make a satisfactory growth during hot weather. When planting during the rainy season, provided the soil is of a sandy nature and is free from weeds so that it will not pack wet, this crop may require no cultivation. The crop is ready to harvest in six weeks to three months after planting."

Professor Rogers' article, entitled "Spinach Growing in California," may be obtained by writing to the University of California College of Agriculture, Berkeley.

J. M. Rusk reports that seven acres planted to spinach for canning brought \$746.64. The crop was all harvested within three months from time of planting.

MARKET—On the local market there is a uniform demand throughout the year for home consumption, but during the winter months the shipper requires enormous quantities. The canners contract for large acreages each year.

Garden Culture—Sow in drills, one foot apart, and for succession, every two weeks; as it grows, thin out for use, keeping clean of weeds. It grows the year round in California. One ounce of seed for 100 feet of drill; 12 pounds to an acre.

Mountain Spinach

Is quite distinct from the common varieties, but more productive. May be cut several times which makes it branch all the more. After several cuttings it will produce enormously of seed. The quality is excellent. Try it. Seed is limited, we offer it in packets only. One packet is sufficient for a family garden. (Pkt. 10c).



New Zealand

New Zealand

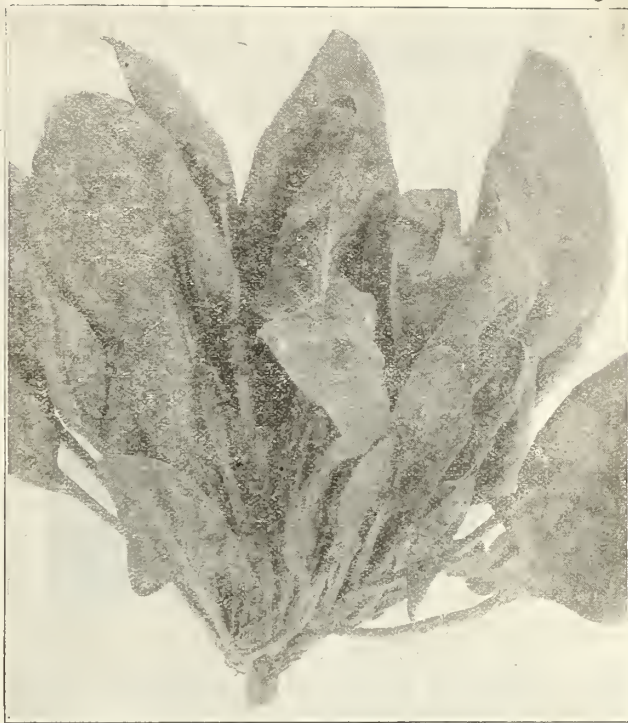
A spreading vine with numerous branches. One plant will cover an area four feet in diameter. The tender tips may be cut every few days and cooked as spinach; it is just as good. One pkt. is enough for a family garden. (Pkt. 10c) (oz. 25c) (¼ lb. 75c).

Long Standing

This is a good sort for market gardeners because it is slow to shoot to seed, and the quality is equal to the best winter variety. (Pkt. 5c) (oz. 10c) (¼ lb. 30c) (lb. 90c) postpaid.

Prickley Seeded, or Winter Spinach

This variety thrives best in the coldest weather, and is the money-maker for the market gardener. Our seed is now American grown, and for several years has given entire satisfaction. The leaves are large, fleshy and very tender. (Pkt. 5c) (oz. 10c) (¼ lb. 30c) (lb. 90c) postpaid.



Viroflay

Viroflay

During the seasons of 1917 and 1918 this variety has become popular as an all-round spinach. It is desired by the grower because it is harder than other varieties and will produce in tonnage per acre more than any of them.

The canner and shipper like it because of its large smooth leaves.

The consumer prefers it because it is exceedingly tender and of mild flavor. (Pkt. 5c) (oz. 10c) (¼ lb. 30c) (lb. 90c). This new variety is one of our valuable introductions and has proven its superiority over all other varieties for beautiful large thick-leaved bunches that bring double the returns to the grower; sells more readily to the peddler and pleases the housewife. For canners no other variety is equal to it. (Pkt. 5c) (oz. 10c) (¼ lb. 30c) (lb. 90c) postpaid.

A & M Improved Thick-Leaf Winter

This new variety is one of our valuable introductions and has proven its superiority over all other varieties for beautiful large thick-leaved bunches that bring double the returns to the grower; sells more readily to the peddler and pleases the housewife. For canners no other variety is equal to it. (Pkt. 5c) (oz. 10c) (¼ lb. 30c) (lb. 90c) postpaid.

Bloomsdale

Large green thick savory crumpled leaves, grows luxuriantly, producing twelve to fifteen tons per acre. (Pkt. 5c) (oz. 10c) (¼ lb. 25c) (lb. 75c) postpaid.

Bloomsdale Spinach is the standard variety throughout the East and South. It has gained popularity here since the canner and shipper have come into the local market.

Mr. Gammon who grew it in the San Fernando Valley reports our seed "is strictly first-class, if any one doubts it send them to me."

A & M Summer Success

For several years we have endeavored to secure a type of Spinach that would prove profitable to grow in summer time, and after several trials this one proved the greatest success. With moist, loamy or peat land the A. & M. Summer Success will grow leaves 14 inches long. The leaves are very meaty and crisp. (Pkt. 5c) (oz. 10c) (¼ lb. 30c) (lb. 90c) postpaid.

Victoria

An excellent round seeded variety. A great favorite throughout the East. It is similar in growth to the Viroflay. (Pkt. 5c) (oz. 10c) (¼ lb. 30c) (lb. 90c) postpaid.

CAR LOADS OF SPINACH AND GREEN PEAS

Every Christmas day every household within the United States may have on the table green peas fresh from the gardens in Southern California.

If you are living in a district where spinach and peas may be safely grown during the winter months, we suggest that you combine with your neighbors to grow fifty or more acres of each, that you may ship in car lots.

Plant the Spinach two months later than peas.

A & M Squash

WINTER VARIETIES

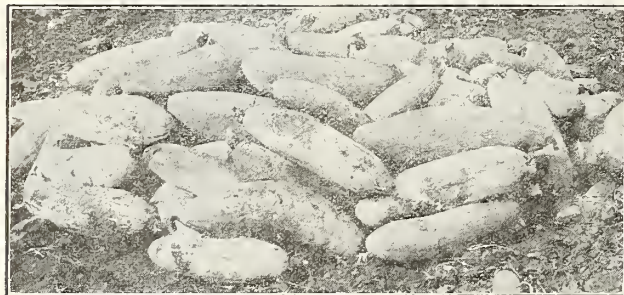
Culture—Seed should not be planted until all danger of frost is past. In open ground plant in hills ten feet apart where irrigated, and fifteen feet apart where not irrigated. In orchard, plant only one row between trees. When the vine is well along, do not flood the hill, but keep the irrigation furrow nearly as far from the hill as the length of the vine. Keep in mind that the roots are longer than the vines.



Green Wartyed Hubbard

Green Wartyed Hubbard This variety is grown more largely probably throughout the United States than any other. It is used in many ways, but mostly for pies. It is a good keeper and because of its hard, warty rind, it is the best of shippers. Therefore many acres are grown in Southern California for that purpose, and many more for the Bakers, the Cannerymen, and family consumption. When in doubt what to plant for a fall crop, plant Hubbard Squash if your soil is suitable. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.

Fordhook Squash This is a most desirable squash for either summer or winter use. The vines are of strong, vigorous growth and wonderfully productive. Squash oblong in form, eight or ten inches in length, slightly ridged; smooth, thin, yellowish skin; flesh very thick and of a light yellow color. If gathered young for cooking, no other squash approaches it in flavor, while if allowed to ripen on the vine they can be stored and will keep in excellent condition until late the following June. Either for baking like sweet potatoes or making pies during the winter, the squash is very fine. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.



Banana

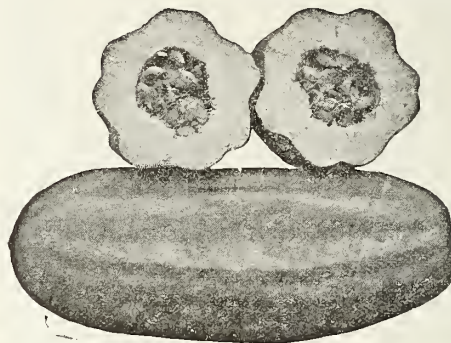
Banana The squash grows from one to two feet in length. The skin varies from a bright yellow to a dark olive green. Flesh firm and solid, of beautiful orange-yellow and excellent quality. It keeps from one season until another. When quite young it is excellent to cook as a marrow. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Boston Marrow Flesh, bright orange or rich salmon color; for sweetness and excellence is unsurpassed. (Pkt. 5c) (oz. 15c) (¼ lb. 35c) (lb. \$1.00) postpaid.

Golden Hubbard The flesh is of a deep golden yellow—a much richer color than the Hubbard—fine grained, cooks very dry, and has excellent flavor. In its keeping qualities it is fully equal to the green variety. (Pkt. 5c) (oz. 20c) (¼ lb. 65c) (lb. \$2.00) postpaid.

Pikes Peak or Sibley An excellent winter squash. Fine grained and superior in flavor and keeping qualities to the Hubbard squash, but not so well known. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

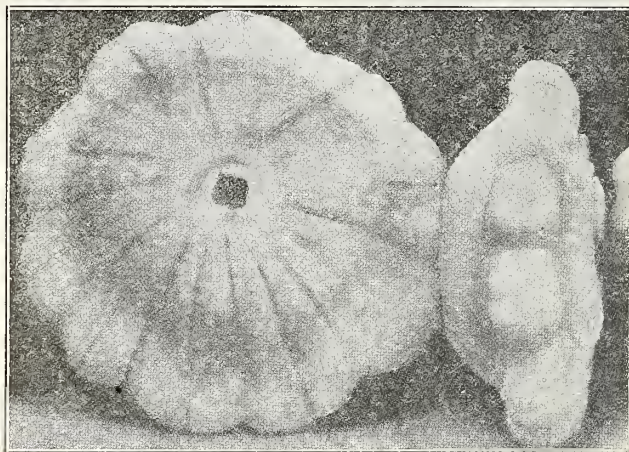
English Cream Marrow



English Cream Marrow

It is as sweet as a sweet potato, and has none of that pumpkin flavor. It is good any way it comes on the table, and is better than Hubbard Squash for pie. It is 6 to 8 inches long and half as thick. (See picture.) Decidedly firm. It will keep from one season to another. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

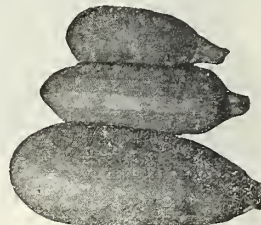
A & M Summer Squash



Extra Early Prolific

Extra Early Prolific This is similar to the White Bush Scallop, only the scallop is not so pronounced, but it is earlier and much more prolific. Yielding half again as many squash. It is a remarkable money maker for the early grower. (Pkt. 5c) (oz. 15c) (¼ lb. 45c) (lb. \$1.40) postpaid.

Zucchetti The favorite Spanish Squash. Like the Italian Squash it should be eaten when quite young, four to six inches long. It is a delicious summer variety; do not hesitate to plant it. It is very prolific, a few hills will suffice to keep the family well supplied the entire summer. (Pkt. 5c) (oz. 15c) (¼ lb. 45c) (lb. \$1.40) postpaid.



Improved White Bush Scallop The well known summer squash that has been the standard for more than fifty years, and always in demand because it is delicious on the table whether stewed or fried as Eggplant. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

Mr. Frank R. Myrick of Roosevelt, Cal., advises that he has found the White Bush Summer Squash to be excellent and profitable for pig feed.

Cocozelle An excellent squash for many purposes. Equal to the White Bush Scallop for the table when taken quite young. It is enormously prolific. When gathered closely and fed to stock, the vines will keep bearing continuously all summer, and far into the fall. It survives drouth to a wonderful degree. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

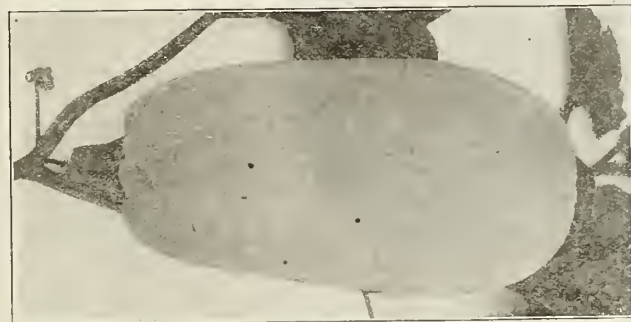
A & M SQUASH—(Continued)



Italian Squash

Italian Squash Is a bush variety, and should be planted 5 feet apart. It should be used when quite young. When served it has a rich creamy flavor not equalled by any other squash. Some gardeners have made considerable money making a specialty of it. For the family garden we would recommend its use instead of the small White Bush Scallop, because of its excellent flavor. Since our introduction of this squash a few years ago, it has now become one of the staple products on the market. It is listed with the daily market reports, and is grown largely by the gardeners in frostless sections for the early trade. (Pkt. 5c) (oz. 15c) (¼ lb. 50c) (lb. \$1.50) postpaid.

Yellow Bush Scallop Similar to the White Bush Scallop in all respects except the color is yellow and claimed by some to have a better flavor. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.



Long White Marrow

Long White Marrow This is exceedingly delicious as well as the most prolific of all English Marrows. Steamed when quite young or fried as egg plant it is equal to egg plant itself. The squash is about 12 inches long when mature, and has a light creamy color. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

C. F. DIXON, California: Last year I got of you a few squash seed with my order, called Long White Marrow, which proved so much superior to any other summer squash that I ever saw or raised that I could not help but inform you of my thankfulness for having it. I sometimes wonder if it was not some new kind that you sent me. At any rate, it grew on very dry ground without irrigation with only a very reasonable amount of cultivation. Growing vines like a pumpkin and matured before the Crookneck and continuing until Christmas, and I believe would have been bearing yet if frost had not killed the vines. For hardiness and tonnage, I believe it would be ahead of any pumpkin I ever saw. At least my pumpkins did practically nothing under even better conditions.

Golden Summer Crookneck The popular well known Crookneck. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.



Golden Summer Crookneck

A & M Tomatoes

Culture—Tomatoes do best on light warm, not over-rich soil, and success depends upon securing a rapid, vigorous and unchecked growth during the early part of the season. Sow in hot-beds from 6 to 8 weeks before they can be set out of doors, which is when danger from frost is past.

Transplant three to six feet apart in rows four to six feet apart, according to variety,—three feet for those varieties of upright growth, as the Dwarf Champion, and six feet is not too far apart for vining varieties which will soon cover the ground solidly. The soil should be plowed and pulverized to a depth of ten or twelve inches, the deeper the better, in order that the roots may keep in the cool earth, for as soon as the roots are heated by the hot, dry soil near the surface, the plant quickly sickens and dies, and the grower can see no cause for it. See illustration, page 60.

In the early fall when the nights have become cool and heavy dews prevail, it would be well to spray with Bordeaux Mixture, to prevent blight. It may be necessary also to spray after each rain throughout the winter.

To prevent root-blight, pour a cupful of Bordeaux around the stem at the surface of the ground.

The time of planting and variety depend upon your local market, soil and climatic conditions, and the purpose for which they are to be grown.

On sandy loam soil near the foothills, where it is nearly frostless, we recommend planting seed of the A. & M. First Early and John Baer in hot beds during November, December, and January for winter and early spring tomatoes. Tomatoes that mature the latter part of April are considered early for Southern California.

Plant seed of the Stone and San Jose Canner varieties during April, May, June and July, for the summer and fall crops, for canners and shippers.

For the home garden plant the HOME TOMATO and the Ponderosa, or Beefsteak.

For shipping, only the perfect tomatoes must be selected, and these bring about \$700.00 per carload, and net the grower about \$300.00 per acre. A community growing for car lot shipment should plant not less than one hundred acres, and they should be ready for shipment from Oct. 15th to Feb. 1st, after which time the Southern tomatoes dominate the market.

Tomato-Leaf Blight Losses May Be Avoided By Spraying

"I wouldn't grow tomatoes in a blight-infested region without spraying," says S. L. Dodd, jr., extension pathologist for the United States Department of Agriculture and West Virginia Agricultural Experiment Station, who sprayed tomatoes for the control of blight in six counties of West Virginia in 1918. Thorough spraying was the keynote of his success. He made six, and in some fields seven applications, using spray mixture at the rate of 150 gallons an acre for mature plants. Spraying improved color and solidity of fruit, reduced rot and sunscald, and increased the yield of ripe fruit 39 per cent, and of both green and ripe fruit 55 per cent.

Small Sprayer Effective

A small knapsack compressed-air sprayer was used in this work. Such sprayers are light, easy to operate, and produce a fine misty spray. Several different kinds, varying somewhat in shape and construction, but built on the compressed-air principle, are now offered for sale.

The spray formula used was 5-5-3-50 Bordeaux soap mixture, composed of 5 pounds copper sulphate, 5 pounds stone lime, 3 pounds resin fish oil soap, and 50 gallons of water.

To reduce the work of preparing spray mixtures the following stock solutions were made: Five pounds of copper sulphate (blue stone) were dissolved by suspending it in a wooden vessel containing 5 gallons of water. Copper sulphate corrodes iron and tin. Five pounds of stone lime (quiklime) were slacked in another vessel by slowly adding water at first and later increasing the volume to 5 gallons. Three pounds of resin fish oil soap were diluted in a third vessel by stirring it in hot water until thin and increasing the volume to 5 gallons by adding water of ordinary temperature.

Have Good Keeping Qualities

These stock solutions keep indefinitely if not mixed or weakened by rain, but the lime should be covered to prevent drying out and air slaking. The level of the liquid when freshly made and after each spray period should be marked on each vessel, and water added when needed to restore loss by evaporation.

Tengalons of spray mixture are prepared by taking 1 gallon of each freshly prepared ingredient. Mix and dilute with water to 10 gallons.

Picking and Hauling the Fruit—Pick carefully and watch your pickers.

Don't disturb the vines any more than can be helped. Impress that upon your pickers.

A & M First Early



A. & M. First Early

A Great Money-Maker

In the \$500,000 class

A & M First Early for the early market and for early canning. We introduced the A. & M. First Early in 1909, and from that time to the present it has superseded all other early varieties throughout Southern California, and is continually growing in popularity here and elsewhere. For a first early money-maker, it has no equal in the tomato line. We cannot give it too much praise. The growers are not looking for an earlier one. It is good enough. (Pkt. 5c) (oz. 50c) (¼ lb. \$1.75) (lb. \$5.00) postpaid.

Dr. E. L. Paulding writes: "Gentlemen: I just want to tell you how well your tomato has paid me. Last December I got some of the A. & M. Tomato seed of you. I have my own plan of forcing, but it is not all in forcing, for I planted some other early sorts the same way, and served all alike. Yours was fully two weeks ahead of Earliana, if not more. I sold tomatoes for four weeks before I had any competition, getting all I asked for them, and having still the lead and the finest tomato in the local market."

J. D. ALTHOUSE: The A. & M. First Early Tomato is sure a wonder. Last year each plant averaged an income of 75 cents.

J. A. NEWFIELD: I set out 900 plants of tomatoes, 200 A. & M. First Early and 700 Bonnie Best. I began picking June 1st and during the season I had sold at wholesale \$1000 worth of tomatoes. This is better than \$1.00 per plant.

The Early Shipper We have grown this tomato aside of the First Early. We are not willing to state that it is in any respect a better tomato, but it has a deeper red color and possibly more uniform shape. On account of its color and shape it may be more desirable for the early shipper, hence its name.

If you are growing for the early market, try it. (Pkt. 25c) (oz. \$1.50) (¼ lb. \$5.00). (lb. \$15.00).

John Baer has exceeded every claim we made for it last season. It enabled the canners to begin two weeks earlier. The gardener brought to the market finer early tomatoes than he ever had before. Every tomato a smooth one. It is very prolific, every cluster bears four or five uniformly sized smooth tomatoes red from blossom to stem. We recommend it for heavy soils and for planting in young orchards. It has naturally a scant foliage suitable for early maturing but will yield ton for ton with the Stone. For early market and early canning plant the John Baer. (Pkt. 5c) (oz. 50c) (¼ lb. \$1.75) (lb. \$5.00).

King of the Earlies This variety is very popular in some sections. It does very well in Coachella and Imperial Valleys. For these places we recommend it.

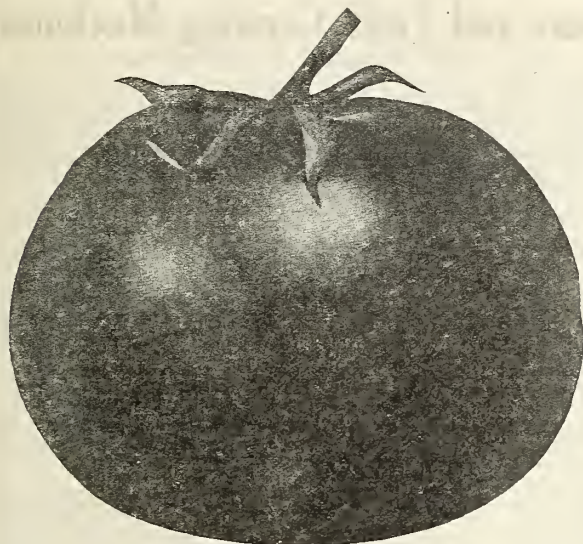
(Pkt. 10c) (1 oz. 60c) (¼ lb. \$2.00) (½ lb. \$3.00) (lb. \$6.00).

Earliana The plants are quite hardy, with rather slender branches and moderate growth, well set with fruits, nearly all of which ripen very early in the season. The tomatoes are bright red and close together in clusters of five to eight; all of medium size, averaging 2½ inches in diameter. (Pkt. 5c) (oz. 40c) (¼ lb. \$1.35) (lb. \$4.00) postpaid.

Bonnie Best Extra early, bright red, uniformly smooth, medium sized, solid and very prolific. It is very popular among growers of early tomatoes throughout the United States and wherever it has been tried. (Pkt. 5c) (oz. 40c) (¼ lb. \$1.35) (lb. \$4.00) postpaid.

Chalk's Early Jewel Excellent early tomato for home or nearby market; very prolific, red, smooth, and desirable size. Its mild flavor makes it desirable as a salad. (Pkt. 5c) (oz. 40c) (¼ lb. \$1.35) (lb. \$4.00) postpaid.

June Pink The most popular extra early tomato grown in the South and East. It is very prolific and may be compared with the A. & M. First Early except its pink color. (Pkt. 5c) (oz. 40c) (¼ lb. \$1.35) (½ lb. \$2.25) (lb. \$4.00).



Greater Baltimore

Greater Baltimore For several years this variety has been extensively advertised by the Baltimore seed house. It is similar to the Stone therefore we hesitated to list it. But last season some of our local growers tried it and recommended it to us. One large canner insists upon having this variety and has already ordered his plants.

Heretofore the Stone has been accepted as the best shipping variety but there is a request for something better. We suggest that shippers try this Greater Baltimore it may prove to be ideal. It is good we know, but is it better than Stone? Try it.

(Pkt. 10c) (1 oz. 60c) (¼ lb. \$2.00) (lb. \$6.00).

Ponderosa, or Beefsteak A very large, purple tomato with few seeds and of excellent flavor. Our strain is round and smooth,—not the usual oblong wrinkled kind. It is a favorite for the home garden, for which purpose we have on hand from March 1st until June extra fine, large, strong transplanted plants. (Pkt. 5c) (oz. 55c) (¼ lb. \$1.85) (lb. \$5.50) postpaid.

MILTON BASTABLE, Buckhannon, W. Va.

I got a packet of Ponderosa from you last year and they were fine and were almost blight proof. Please send as good or better this year. Thanks for your catalog, it is the best I get.

Golden Beauty A large yellow tomato of delicious flavor, and when preserved with a slight flavoring of lemon, is better than preserves made of any other tomato, because it lacks the strong tomato flavor. It is an excellent variety for salad. (Pkt. 5c) (oz. 35c) (¼ lb. \$1.00) postpaid.

Golden Ponderosa A very large yellow tomato having a delicious flavor making a delightful salad. The yield is enormous. Jordan and Casey of Redondo set out on May 25, 22 plants. On August 25 began picking; by November 15 they had picked more than 2000 pounds of tomatoes. The gentlemen are experienced tomato growers and say they never saw anything to yield so many large smooth tomatoes. (Pkt. 5c) (oz. 50c).

Home Tomato History of the Home Tomato—We are indebted to A. Brandenberger of Lanckershim, for calling our attention to this wonderful tomato. In his hotbed one plant grew far ahead of all the others. It was quite distinct in having large foliage. Mr. Brandenberger set it in a four-inch pot, and when only eight inches high, it blossomed, and when twelve inches high these blossoms developed three nicely shaped tomatoes. This plant was exhibited in our window as a curiosity. It was transplanted to the ground and grew to cover an area of fourteen feet in diameter, loaded with tomatoes. In order to keep pure, Mr. Brandenberger propagated from cuttings off the original plant. Therefore we termed it the Home Tomato, on account of its earliness, delicious flavor, nearly round smooth shape, solid meat, and productiveness. Just the tomato for a home garden, where it can be trellised when space is limited. (Pkt. 10c) (oz. 50c) (¼ lb. \$1.50) (lb. \$5.00) postpaid.



Grape Tomato

Grape Tomato It makes an attractive arbor vine with a profusion of delicious fruit for preserving. (Pkt. 5c).

Get a Home Canning Outfit, and can your surplus tomatoes. Put them up right and establish your brand.

A & M Main and Late Crop Stone Tomato

For Market Near and Far—the Tomato for Canning

The New Improved Stone This is the most popular tomato in Southern California. Several thousand acres are planted to this variety exclusively for shipping to Eastern points after other tomatoes have been destroyed by frost. For this purpose the seed is planted about June 15th, and the tomato brought to full size about October 1st, after which it gradually ripens as wanted for shipping. The tomato is of good size, bright red, solid and smooth, enormously productive.

The canners prefer it because of its uniformly desirable size and solidity for canning. The grower prefers it because of the vigorous growth and large production extending throughout the season far into the winter months.

(Pkt. 5c) (oz. 40c) (¼ lb. \$1.35) (lb. \$4.00).

San Jose Canner For several years canners in the San Joaquin Valley have recommended this tomato. We are slow to offer our trade any new thing that we are not thoroughly familiar with. Therefore we tried this tomato and can say it is superior to the Stone. Just the thing that will sell ahead of the other fellows at the market. It is large, prolific and deep red. (Pkt. 5c) (oz. 50c) (¼ lb. \$1.75) (lb. \$5.00) postpaid.

Hummer We consider this one of the finest tomatoes for the market gardeners. It is early, solid, smooth, good size, bright red, and enormously prolific with abundant foliage to protect the fruit from scalding. As a shipper it cannot be excelled, even by the popular Stone tomato. (Pkt. 5c) (oz. 50c) (¼ lb. \$1.75) (lb. \$5.00) postpaid.

Dwarf Champion (Tree Tomato)—Has long been a favorite midsummer tomato. Pink in color, smooth and solid, making it a good shipping variety. This has proven very satisfactory in Arizona. Its dense foliage protects the fruit from sunburning. (Pkt. 5c) (oz. 40c) (¼ lb. \$1.35) (lb. \$4.00) postpaid.

Dwarf Stone (Tree Tomato)—Large, red, smooth and solid. The stalk is upright, with dense foliage protecting the fruit from the heat of the sun. It is a desirable tomato to grow in the interior valleys. (Pkt. 5c) (oz. 40c) (¼ lb. \$1.35) (lb. \$4.00) postpaid.

Genuine Italian Red Pear Shaped

Used largely for making puree, preserving and spicing (Pkt. 10c) (oz. 50c).

Yellow Egg Excellent for pickling and preserving. Small yellow egg-shaped tomato of mild flavor. (Pkt. 10c) (oz. 50c) postpaid.

Ground Cherry Grows like a tomato; fruits like a tomato, but the small fruit is enveloped with a husk. It is good for preserves. (Pkt. 10c) (oz. 50c).

SOME INTERESTING FACTS INCIDENTALLY LEARNED WHILE PROPAGATING THE HOME TOMATO

Cuttings from the original plants, which were grown in a sandy loam, planted in adobe and watered freely grew large irregularly shaped tomatoes quite acid in flavor, while cuttings from the same plant grown in sandy loam at Artesia even with some alkali, grew smooth, uniformly shaped tomatoes.

If soil will produce such varied results with cuttings, it is likely to make a similar difference with plants grown from seed, which would account for many disappointments.

Also if soil will produce such varied results with tomatoes, it may do likewise with many other vegetables and also fruits.

MRS. E. C. KELLER, California.

All the farmers in the neighborhood of our ranch used to smile as they looked at my inadequately cultivated patch of tomatoes, but now their smiles are gone and they can't understand how I got so many tomatoes on such thin vines as he A & M Early or how I could produce such magnificent vines as the Hummer Globe.

COMPLIMENTARY

J. C. WATKINS, California

I am delighted with your 1919 catalog; it is the gardener's encyclopedia.

A & M Turnips

Culture—(See page 9). Turnips may be sown broadcast on damp sandy soil or in drills as beets and carrots. Drill in rows ten inches apart, not too thick in the row. The Purple Top Globe variety is now leading in popularity because of its mild flavor and its adaptability to our summer climate.

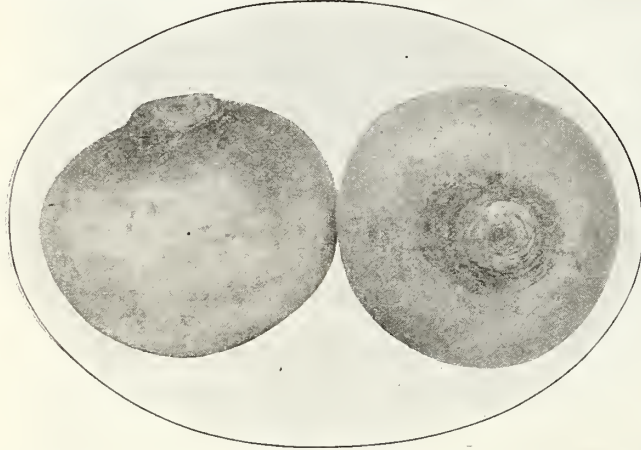
Early Purple Top Strap-Leaf A very popular variety in this section for either family or market use; large size, white, purple above ground; flesh fine grained. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.



Early Purple-Top Strap-Leaf

Early White Flat Dutch An early white-fleshed strap-leaved variety; for quick growth, mild flavor and excellent quality. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

Early White Globe A large, round turnip, with sweet flesh. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.



Purple Top Globe

Purple Top Globe Solid, very sweet, slow to get pithy. The very best variety for the summer season. Indeed, the best for any season, but slower to mature than the Strap-Leaf. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

Snowball Next to the Purple-Top Globe in popularity, but preferred by many because of its beauty and excellent flavor. It is slow to get pithy in the summer, but always crisp during the winter. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

Improved Purple-Top Rutabaga

The best of the Swede Turnips. Very hardy and productive; flesh yellow, is very solid, sweet and well flavored. (Pkt. 5c) (oz. 15c) (¼ lb. 35c) (lb. \$1.25) postpaid.

THE WOMEN OF THE FARM

If you have read the complimentary notices in this catalog you will see that the greater number are from "The Women on the Farm."

Our correspondence includes many letters from ladies ranging in ages from seventy to sixteen. All enthusiastic with success.

Independent of the man about the place they in many cases have achieved more than the man; but in most cases they have by their whole hearted support encouraged the man to success when alone he would have failed.

Therefore ladies, encourage the man all you can, but have an independent side line all your own. It may be chickens or other domestic animals. It may be cut flowers, bulbs, or it may be canning fruit and vegetables and selling the surplus by the wayside.

Let no one be idle at a time when it is not only charitable and patriotic but very profitable.

Properly sown seeds is not all that is necessary to insure sound healthy vegetables. The multiplication of insect pests and fungus troubles has made it impossible to grow crops successfully without timely and proper spraying. Never has it been so necessary to properly protect vegetable crops as it is today. To Attain Success, read this Catalog.

Golden Ball or Orange Jelly

A rapid grower of excellent flavor; bright yellow color; good keeper and a superior table variety or for stock. (Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.25) postpaid.

Home and Field Canning Machines

Write for our Catalogue of Canning Machines

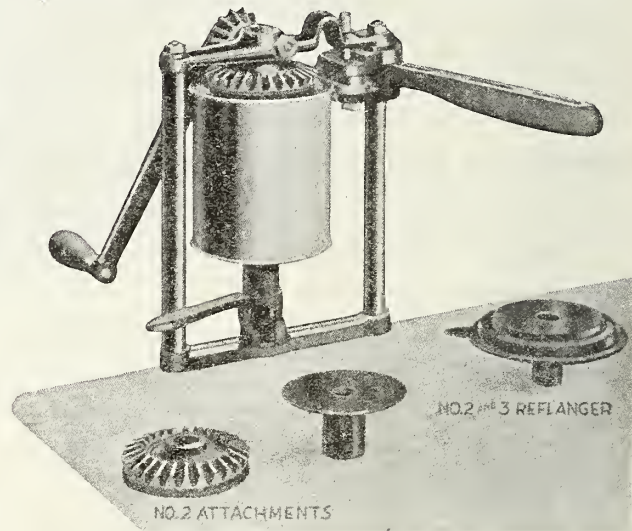
Adults and children can, in a few hours, with one of our HOME CANNING OUTFITS, learn to preserve all the surplus fruits and vegetables off the ranch for the family needs throughout the year, and sell the surplus, turning to profit the perishable products which formerly went to waste, thereby increasing the food supply and reducing the high cost of living.

This outfit complete will consist of the Canning boiler, two lifting hangers, two can trays, one Capping Steel, one Tipping Steel, a pair of can tongs and a book of instructions. Will process three layers of fruit at a cooking, fourteen No. 2 to the layer, making a total of forty-two or eight No. 3, making a total of twenty-four. It is also equipped with a close-fitting lid. Shipping weight crated in wood 55 lbs., in carton about 42 lbs. This Canner will work any kind of glass jars or tin cans and burns wood or coal.

During the early period of the war, in conformity with the spirit of the time to save and to increase food production, we imported from the east at pre-war prices a large assortment of canning machines. All are now sold but two of the smallest size. It is prohibitive to import more at present prices. We therefore wish to dispose of these two machines at a sacrifice price. \$10.00 f. o. b. here, weight 55 lbs. They are quite new.

Mrs. M. E. Iwo, California.
My ranch (which is small and on which I raise truck garden) is situated in Mill Creek Canyon three and one-half miles this side of Forest home. I had a stand by the roadside under an apple tree. During July and August I sold almost \$100 worth of vegetables and fruit during that time. Am sending a small order now taken from an old catalog would like you to send me your 1918 catalog. I am an old lady in my 64th year but I like to raise vegetables.

SOMETHING NEW AND VALUABLE



BURPEE HOME CAN SEALER

If interested write for circular.

When we offer any new thing, it must have merit. Therefore we stand back of it. This new can sealer appeals to us because it is economical and easy to operate. You may use the sanitary tin cans, they cost less. Each can may be used three times, once when new, twice again by removing first one end and reseal, then the other end by using the opening and reflanging attachment.

It is surely an economical tin can sealer, and ought to have a place on every fruit or vegetable ranch. Every housewife can then put up all surplus fruit and vegetables and sell the canned articles by the wayside, just as Honey, Olives and other ranch products are now sold.

There is money in it. Establish your own brand and build up a demand for it.

Approved by United States Department of Agriculture

The following letter was written from the United States Department of Agriculture:

"A hand-sealer of this type will make it more possible for every farm home to become a canning factory. We congratulate you upon your achievement in perfecting this machine and thank you for the contribution to the success of home canning work."

The manufacturer puts out several sizes but we have selected for you only the one complete machine, the one that will seal, open and reflange both pint and quart cans. It is the most complete machine they put out, and sells for only \$24.00 f. o. b. here.

Complete operating directions go with each machine. It is easy to operate.

We can furnish Sanitary tin cans at market prices at the time of purchase.

Insecticides

Write University of California, College of Agriculture, Berkeley, Cal., for Circular No. 128, Insecticide Formulas by C. W. Woodworth.

The ever increasing army of insects demands cooperative and scientific combative action. The insect cannot be ignored even in a small garden. To destroy insects is as much a part of your routine garden work as is cultivation and irrigation. It must be done to insure success. Therefore, study and prepare for it as an essential part of your agricultural education.

With our scientifically prepared chemicals and up-to-date appliances, it is no longer necessary to experiment in selecting the proper remedy.

Pursuant to our liberal policy of education we give here several formulae that can be easily and cheaply prepared at home. These several formulae will meet almost every emergency that may arise.

For the convenience of those who want small quantities, or who are not prepared to compound these formulae we have them for sale in any desired quantities all ready for use except to add the required water.

Notice Poisonous insecticides cannot be sent by mail. Many insecticides are not dangerously poisonous. Some are in liquid form, put up in tins or glass; to send these by mail, extraordinary care must be given to the packing, which necessarily adds much to the weight and therefore the postage may seem out of proportion to the purchase price.

On bulky items where the postpaid price is not mentioned, we prefer to send by express, and shall do so unless requested to do otherwise.

If wanted by parcel post, add sufficient money to cover postage. Estimate liquids plus package at the rate of 4 pounds to the quart, or 14 pounds to the gallon. See parcel post rate on inside of front cover page.

Prices fluctuate and are subject to market changes.

Emulsion for Black Scale, Aphis and Mealy Bug Dissolve 1 lb. Gold Dust in 8 gal. tepid water. Let stand eight hours. Add 4 gal. water and 1 pint engine distillate. Mix thoroughly.

If not properly prepared the ingredients will separate, causing the oil to float on the surface, it will thus be the last to go through the sprayer and may injure the foliage. We offer properly prepared Emulsion at the counter only. (qt. 50c) (Gal. 75c).

For Mealy Bug During February remove the earth from around the base of trees or plants where they harbor and breed. Apply sufficient emulsion to thoroughly saturate the soil for two inches. Proportion the quantity to the size of the plant.

Bran Mash for Cut Worms Paris Green 1 lb., lemons 3, molasses 2 qts., water 3½ gals., bran ½ bu. Mix bran and Paris Green dry; cut lemons into fine pieces. Mix all thoroughly.

Bordeaux Mixture for Mildew, Fungus, Blight, Rust A repellent to be applied before the attack. Four lbs. of bluestone, 5 lbs. of lime to 50 gallons of water. The formula 5-6-50 is used for good sized plants. One-fourth to one-half pound Paris Green may be added to either formula. The above spray is used for blight or a general repellent.

When applying Bordeaux on tomatoes, add ¼ lb. Paris Green to destroy the worm.

Sulphur—(Powder) For Mildew, Fungi, and Red Spider. The best known effective repellent against Mildew on beans, peas and grapes, or red spider wherever it appears. Use only the best brand of finest sulphur for this purpose. Apply while the dew is on the foliage and at a time when there is least wind. Bear in mind the heat of the sun promotes sulphur fumes, it is this that is effective.

Anchor brand is the best and most economical. Per sack \$5.50.

Paris Green—(Powder) Sure death to all insects that eat foliage. To four gallons water, add one tablespoonful and keep well agitated. A very small quantity of flour paste will add greatly to its efficiency by causing it to adhere to the foliage.

For cut worms and grass-hoppers add one tablespoonful of Paris Green to ten pounds of bran and spread about the base of the plants.

When spraying tomatoes with Bordeaux, add ¼ lb. Paris Green to each barrel of Bordeaux. (¼ lb. 40c) (½ lb. 75c) (1 lb. \$1.25).

Lime Hydrated (Air-slacked Lime) Where freshly sprayed on any vegetation, that foliage will not be eaten by snails, slugs, bugs, rabbits or squirrels. Add to its efficiency by thoroughly mixing with it, one teaspoonful of Paris Green to each five pounds of lime. (4 lb. carton 20c) (8 lb. sack \$1.50).

To avoid loss from rabbits and squirrels, dust the threatened edge of your field with hydrated lime. The rabbits not only will not eat the foliage that is dusted but will keep out of it. This experiment was made on sweet potatoes with satisfactory results. Try it on your beans, peas and melons.

Tree Tanglefoot (Paste). This is a sticky substance applied to the bark of trees to protect them from all climbing insects and also rabbits. It will prevent ants from entering the trees for three or four months. (1 lb. cans 60c) (3 lbs. \$1.75) (10 lbs. \$5.00) (20 lbs. \$9.00).

“BLACK LEAF 40”

Nicotine Sulphate—40% Nicotine

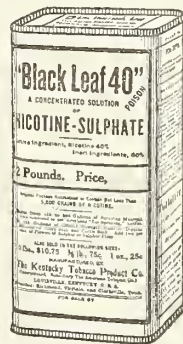
This is the insecticide that is so highly recommended by Experiment Stations. It destroys Aphis (plant lice), Thrips, Leaf-hoppers on all tree, bush and vine fruits, vegetables, field crops, flowers and shrubs; also Apple Red Bug, Pear Psylla and similar soft-bodied sucking insects—all without injury to foliage.

May be combined with other sprays. Highly concentrated. Soluble in water—easy to mix—does not clog nozzles.

You can not go wrong by ordering “Black Leaf 40” for sucking insects.

PRICES:

1 oz.-	\$0.25-makes	6 gallons spray
½ lb.-	1.00- “	40 to 120 gals. spray
2 lb.-	3.25- “	160 to 500 “ “
10 lb.-	13.75- “	800 to 2500 “ “



Paste As Spreader Commercial flour paste, such as is used by bill posters and paper hangers, has been found excellent to mix with spraying chemicals to form a body to spray materials which do not spread easily and have a tendency to settle in the tank or run after being placed on the foliage or fruit. Mixed with lime sulphur, black leaf 40, arsenate of lead or sulphur pastes, in the proportion of six pounds to the hundred gallons, it increases the covering and sticking quality. If the orchardist or vineyardist desires to mix his own paste, he can make it by sifting carefully three pounds of wheat flour and mix into a thin batter with cold water, boil for ten minutes or until clear and strain into spray tank.

Formaldehyde (Liquid). For destroying the germs of smut on grain, scab and rhizoctonia on potatoes. Dilute one pint in forty gallons of water, submerge potatoes one and one-half hours and grain only long enough to moisten it. (½ pt. 50c) (pt. 90c) (qt. \$1.75).

Nico Fume (Liquid). For aphis in hot-houses. Similar to but more volatile than Black Leaf 40. Nicotine is especially prepared for greenhouses and hot-beds. Either spray or fumigate by vaporization. Insert hot iron in the fluid. Sold in tins. (¼ lb. 50c) (5 lbs. \$5.50). Add postage.

Blue Stone (Sulphate of Copper). Applied in time it will prevent mildew and all fungus diseases. Also prevents smut on barley and wheat, by soaking seed to be planted in a solution of 1 lb. to 6 gallons of water for ten or fifteen minutes. (Per lb. 25c). Write for quantity price. Can be sent by parcel post.

Carbon Bi-Sulphide (Liquid). For exterminating gophers, squirrels, ants or any vermin that live under the ground. Saturate cotton or other absorbent, put deep in hole and close all openings. For ants, pour into the openings. For weevil in grain, put grain in air-tight chamber; for 100 cubic feet of space use ½ pint Carbon Bi-Sulphide, saturate it into any absorbent so that it will evaporate quickly; close the chamber tightly for three or four hours. It is not necessary to remove the grain from the sacks. **Notice:** It is very combustible. Do not smoke or have fire near while handling. (12 oz. 40c) (25 oz. 60c) (1 gal. \$2.00). Cannot mail.

P. S. C. Rosin Spray Effective for black, red, yellow, purple and citricola scale, mealy bugs, wooly aphis, black peach aphis and plant lice. Recommended by the Horticultural Commission. Dissolve 1 lb. of the spray in 2½ gallons of either hot or cold water and thoroughly mix before spraying it on trees or plants. (1 lb. can 30c) (2 lbs. 45c) (4 lbs. 75c) (40 lb. can \$5.00) (80 lb. can \$8.00) (bulk 7½c per lb.).

Slug-Shot, Hammond's (Powder). Destroys bugs, insects and worms on melons, lima beans, cucumbers and tender plants. Also for use on asters, roses and flowering plants. Easily distributed by dust or in water by spraying 1 lb. to 10 gallons of water. (1 lb. packages 25c) (5 lbs. packages 75c). Cannot mail. Not injurious or dangerous to persons or animals.

Sulpho-Tobacco Soap Used as a spray for aphis, thrip, mites, and a wash for skin diseases on animals. (Small size 10c) (large size 25c). Add 5c for packing and postage.

Tobacco Dust (Powder). For aphis and small insects in plant beds and poultry houses. (1 lb. 15c) (10 lbs. \$1.25). Cannot mail.

Tobacco Stems For fumigating green-houses. (1 lb. 15c) (10 lbs. \$1.00). Add 5c lb. for packing and postage. Also sold in 100 lb. bales at \$3.75 per cwt. f. o. b. here.

THE SHERWIN WILLIAMS LINE

We are pleased to announce to our patrons that we are offering the entire line of Sherwin Williams Insecticides and Fungusicides, knowing them to be equal if not superior to all such lines. Write for quantity price on all insecticides. Write for pamphlets on spraying.

Sherman Williams Dry Powered Arsenats Lead

May be used as a wet spray or dusting. For the control of Codling moth and all leaf eating and chewing insects.

For wet spraying use one to one and one-half pounds to fifty gallons of water. For dusting, mix with five or six parts powdered lime. (½ lb. 45c) (1 lb. 70c) (5 lbs. \$2.75). Write for quantity prices.

Shermin Williams Fungi-Bordo This is the true powdered Bordeaux mixture. Recommended for peach, potato and tomato blight, and all fungus diseases. Mixes perfectly with water. Use seven to nine pounds with fifty gallons of water. (1 lb. 50c) (5 lbs. \$2.00) (10 lbs. \$3.50). Write for quantity prices.

Sherwin Williams Dry Lime "Sulfur"

Is effective against the same insect pests and fungus diseases as the Lime Sulphur solution. Will control San Jose scale, Leaf Blitzer mites, peach leaf curl and red spiders. State Experiment Stations have tested Dry Lime-"Sulfur" for the past three years and report perfect tests. For spraying dormant trees use from ten to fourteen pounds to fifty gallons water, or eight to ten table spoons full to one gallon of water. For summer spraying against fungus diseases on all stone fruit, use two and one-half to three pounds to fifty gallons water. (1 lb. 35c) (5 lbs. \$1.25) (10 lbs. \$2.25). Write for quantity prices. Can send by mail.

Sherwin Williams Tuber-Tonic A two-in-one spray—controlling both the tomato worm and blight. Many large tomato and potato growers have used Tuber-Tonic with splendid results and have re-ordered. A combination of Paris Green and Bordeaux Mixture. Seven to ten pounds to fifty gallons water. Prices—(1 lb. 50c) (5 lbs. \$2.00). Write for quantity prices.

Sherwin Williams Pruning Compound

Will aid nature in healing her wounds instead of retarding the growth. Has special disinfectant qualities. The Compound is ready for use, cover all cuts at once—use stiff brush or cloth to apply. (1 qt. 75c) (1 gal. \$2.25).

Fish Oil Soap For scale and fungus. Should always be mixed with Black Leaf 40 to eradicate aphids. (½ lb. 15c) (1 lb. 25c) (40 lb. case \$7.25). Add postage.

Killscale Soap For scale, aphids and any sucking insect on plants. (2 lb. cakes 25c). Add 10c for packing and postage.

XX Mystic Spray (Liquid). For the extermination of mealy bugs. This insecticide has recently been introduced into Southern California and is highly recommended by many horticulturists and nurserymen. Dilute one part Mystic to thirty parts water. Add one ounce of Gold Dust to each gallon and use abundantly as a spray on all affected plants. (Pkt. 50c) (qt. 75c) (gal. \$2.50) (5 gal. \$10.00).

"To whom it may concern:

We have used the "Mystic," a liquid solution, as an insecticide and we find that, in the proportion of thirty to one, it is a very effective remedy for "Mealy Bug," as we have had as high as 90% kill.

It also works effectively against soft scale in a proportion of fifty to one. Respectfully,

J. A. NORRIS & SON,
(Signed R. D. Norris).

Nico Fume (Paper). Sold in tins of 24 sheets. One sheet is sufficient to fumigate 100 cubic feet. Will rid green-houses and hot-beds or aphids, and chicken houses of lice and mice. Directions printed on each package. (24 sheets \$1.00) postpaid.

S. P. Gopher Balls A sulphur preparation which is very effective in eradicating gophers and squirrels. Light the balls and insert them in the open runs, after which close tightly. Put up in boxes of one dozen, (40c) postpaid.

Gopher Candles Place in gopher or squirrel runs, light the fuse and close the openings. The fumes will kill all vermin. Per bundle of twelve, (75c). Add 10c for packing and postage.

Gopher Poison MOORE'S (Grain). A certain and specific destruction of gophers, squirrels, crows and mice. (Small size 50c) (medium size 90c) 5 gal. drums \$6.00. See Gopher Poison.

Fumigation for All Kinds of Scale Multiply distance over tented tree by distance around; "point off" last two figures. Three-fourths of this amount is number ounces Sodium cyanide required. For each ounce cyanide use 1½ ounces Sulphuric Acid in two ounces water. Place latter in deep dish under tent; drop in Cyanide, close quickly, leave one hour. Do not breathe gas, to do so is instant death.

Ant Exterminator, Talbot's Powder The best known remedy to exterminate ants and roaches. Put up in paper shakers. (25c) (50c) and \$1.00 size. Add 10c for package and postage.

Fertilizers

WRITE FOR QUANTITY PRICES ON ALL FERTILIZERS

The necessity for using fertilizer is more and more apparent. The gardener has learned it is not profitable to economize in the use of fertilizers. But scientific farming teaches us that fertilizers must be chosen and applied intelligently. Therefore we advise that you write the College of Agriculture, University of California, at Berkeley, Cal., for Bulletin No. 272 and 288 and Circulars No. 170 and 111. Write United States Department of Agriculture, Washington, D. C., for Farmers' Bulletin No. 921.

The three most essential ingredients in fertilizers, to stimulate plant growth, are nitrogen, phosphoric acid and potash. In the following high grade fertilizers we have all of these combinations properly mixed to give the best and quickest results. They contain no weed seed and are easily applied.

Bradley's Fertilizers These fertilizers have been manufactured and placed upon the market for over fifty years, and we have handled them for more than twenty years. The aim of the fertilizer company is to furnish the fruit grower, farmer and trucker such mixtures as his special soil and crop conditions demand, and we can recommend the following kinds of fertilizer to be especially adapted to the needs of the various plant life.

Bradley's Lawn and Garden This brand is a complete fertilizer intended for lawns, gardens, and is a general purpose fertilizer. Can either be sown broadcast and harrowed in or drilled with the seed. Excellent for berries of all varieties. (50 lb. sacks \$2.00) (100 lb. sacks \$3.00).

Bradley's Packers' Special This has been especially prepared for the gardeners and has given excellent results during the past year. It is all organic. Analysis shows 4% nitrogen, 10% total phosphoric acid and ½ or 1% soluble potash. (Per 100 lbs. \$3.50.)

Bradley's Tree and Vine A complete fertilizer that will give immediate results. Just the thing for trees, shrubs, vines and roses. Analysis 3% ammonia, 8% available phosphoric acid, and 2% available potash. (Per 100 lbs. \$3.15).

Fish Fertilizer This fertilizer is composed of dried fish, finely ground, and is purely organic. An excellent fertilizer for all crops. Will last for several crops without the need of other fertilizer. Write for prices.

Dried Blood Meal Is very rich in nitrogen and an excellent plant-food for increasing the yield of vegetables and fruit, and also for stimulating the growth of flowers. There is from 12 to 13% nitrogen. Price (per 100 lbs. \$7.50).

Bone Meal 3½% nitrogen and 16% phosphoric acid. In their action. If put in the soil in the Fall, some results will show the following Spring. Slow but sure. (Per 100 lbs. \$3.85).

Nitrate of Soda Contains about 15% nitrogen. Is very quick in action and entirely soluble. Is best applied after the plants are growing. Price fluctuates; write for prices.

Leaf Mould Excellent for mixing with soil for potted house-plants, especially ferns of all kinds. (Per sack \$1.00).

Gypsum This is not a fertilizer, yet it has an indirect fertilizing value, which is mainly due to the fact that it has the power of changing unavoidable forms of plant-food, especially potash, into available forms. A heavy dressing of Gypsum will greatly improve any soil, rendering it lighter and more easily cultivated, and relieve the tendency to crust and bake. Have the soil analyzed by the State Agricultural College before using Gypsum. (Per 100 lbs. \$1.00).

Agricultural Hydrated Lime

It supplies the element calcium to plants; it makes "sour soil sweet," changes an acid condition to a slightly alkaline one; it has the power to shrink clay and adobe soils, making a larger number of crumbs from a sticky mass; it prevents packing, baking and cracking, makes cultivating easier; it promotes the normal decay of organic matter in the soil, preventing the accumulation of poisonous matter; it promotes the change of nitrogen in organic matter into available nitrates, liberates and places at the disposal of plants potash and phosphoric acid already in the soil. It destroys fungus and the germs of insect life that infest the soil. Hydrated Lime, because of its fineness, high calcium contents and concentrated condition, is the ideal agricultural lime and the most economical on the market. Use one-half less than other forms of lime. In cloth sacks weighing approximately eighty pounds. (Per sack \$1.50). Write for prices in ton and carload lots.

Recent Scientific Discoveries

Read this Page.

OUR POLICY

Last year we announced two new theories that promise to work wonderful advance in agriculture, promise economy and at the same time increase production.

It has always been our policy to be abreast with the times, advocating any new thing that promised progress in agriculture whether it be the introduction of a meritorious vegetable or other plant or to advocate some new method of agriculture. Now after a lapse of twenty-seven years, upon reviewing our work, we can report that our judgment has been good.

The best vegetables on the Los Angeles Market, the biggest money makers that are now being shipped out of Southern California, throughout the world have been introduced by us.

Whenever the Department of Agriculture promulgated any new thing; or any good idea from other sources, we were quick to advocate it, to watch every experiment and report results through this catalog.

Many ideas that we indorsed at their introduction are common place today and need no further indorsement, nor advertisement.

In our 1908 catalog we devoted two pages to advocating Cotton Culture in California there was not then a gin mill in the state.

Ours was the first seed house in the United States to advocate and offer for sale Nitrogen Bacteria at that time advocated by the department of Agriculture, Washington, D. C., and propagated at West Chester, Pa. Its benefits are now universally conceded.

Ours was the first seed house to use its catalog to advance the Campbell method of Dry Farming, that has added millions of acres to the producing area of the United States. We imported from the east and offered for sale the first sub-surface packer used on this coast. No implement house at that time would handle it; now none are without it.

Ours was the first seed house to systematically observe how our local variation of soil, climate and moisture has to do with vegetation and modes of agriculture. What varieties of vegetation to plant each month, in each soil and location and what method of cultivation to apply. Our catalog is now an accepted standard on such information.

Sow Less Seed and Harvest More Grain

Read—How non-leguminous crops are benefited by leguminous plants.

For fifteen years or more leguminous crops have been increased by the application of nitrogen bacteria; but this bacteria could not apply to non-leguminous crops.

Now a method has been found by which grain and other non-leguminous crops can be benefited by this bacteria.

By the simple method of planting inoculated Vetch seed with your winter crops—wheat, barley, oats and rye, 10 pounds of Barley with 30 pounds of Vetch will produce more barley grain, more hay and in addition Vetch seed enough, the sale of which will more than pay for seeding the entire crop and leave enough seed for subsequent plantings. Try it, others have done it.

Credit must be given the Western Soil Bacteria Company for this discovery and proving it beyond a doubt by demonstration. Therefore if your soil is sandy or adobe or any intermediate stage, sow Vetch with your grain, whether for hay or for seed it will double your yield and improve the soil for the crop to follow.

Another method by which to increase the yield.

By intercropping beans or other legumes with tomatoes, corn, cotton or other field crops, also squash, egg plants or other garden crops.

Another method of getting results from the nitrogen of legumes is the rotation of crops.

It is now well established that barley following beans, yields 25% more grain or hay than formerly. Likewise will any other crop be benefited that follows a leguminous crop.

Raise Barley in Alfalfa Fields

For a number of years President Volney H. Craig of the Farm Bureau has been "putting one over" on his fellow livestock raisers by raising an extra crop of spring barley in his alfalfa fields. And not only does he thus increase his yield of hay, but he is able at the same time to supply considerable winter feed, for it is his custom to pasture the barley down several times before allowing it to head. In addition he has found that this practice virtually results in the disappearance of that pest of pests, foxtail.

Mr. Atherstone expects to take from 30 to 35 sacks of barley per acre from his field and the entire seeding consisted of 10 pounds of barley and 35 pounds of vetch inoculated. In the adjoining field, same land, everything the same; planted the same day, 70 pounds of barley was used to the acre, no vetch and no inoculation. The field where we planted 10 pounds of barley and 35 pounds of inoculated vetch will yield according to experts, at least one-half more than where they planted 70 pounds of barley alone.

A certain market gardener in the east made the statement at a gardener's convention that "For twenty years he intensively farmed the same plot of ground without fertilizing." In explanation he said that immediately after he completed the last cultivation he sowed Vetch, which made a good growth until frozen. He then plowed it under, thus putting the ground in excellent condition for spring planting. Scientific farming pays.

A NEW INNOVATION OF GREAT IMPORTANCE

SULPHUR

FERTILIZER, INSECTICIDE AND FUNGICIDE

100 to 300 pounds of sulphur per acre spread broadcast and harrowed will prove a good fertilizer and act as a repellent against any fungus; it may entirely prevent mildew, rust, wilt, blight and nemetoid and may destroy eggs and larva that may be in the soil.

Sulphur as a Fertilizer Experiments conducted during the past few years by noted soil chemists and practical cultivators have revealed the truth that Sulphur kills alkali, promotes nitrification, transforms potash and phosphates lying latent in the land into available plant food, thereby reclaiming and stimulating soil to produce greatly increased crops at a comparatively low cost per acre. The following are authorities for the above statements:

Dr. C. B. Lipman, Professor of Soil Chemistry and Bacteriology, University of California.

Dr. F. C. Reimer, of the Southern Oregon Agricultural Experiment Station.

Professors P. E. Brown and E. H. Kellogg of the Iowa Agricultural Experiment Station, authors of "Sulphification in Soils."

Wonderful successes have been made by those who have fertilized soils with Sulphur. Here is one of the practical results:

Dr. F. C. Reimer, of the Southern Oregon Experiment Station, harrowed powered Sulphur into Aogee River Valley land in the proportion of 300 pounds to the acre. He planted alfalfa in this sulphurized soil and in an adjacent untreated tract under exactly similar conditions. At a total cost of about \$10.00 per acre he harvested a crop of five times the yield of the adjacent field. He cleared about 500 per cent on his investment in Sulphur, of which a goodly part remained in the soil as a nest-egg for the next year's crop.

We handle only the best brands of Sulphur, which are as follows:

Anchor Brand, 110-lb. sack.....\$5.50
Eagle Brand, 110-lb. sack.....5.30
Diamond S Brand, 110-lb. sack.....3.80

Write for quantity prices.

DESTROY THE ANT

The one insect pest that now annoys every household every garden, orchard and ranch is the Argentine Ant. It is not exaggerating to say it is more destructive than any other insect, because were it not for the ant there would be less of Aphids, less of Mealy Bug and Scale. The Ant is known to herd these as carefully as a shepherd herds his flock.

Whole communities have systematically destroyed the rabbit where they were in such numbers as to be a pest.

State and County officials have co-operated to eliminate the squirrel.

The whole Nation combined to "Swat the Fly."

Why not destroy the Ant?

The Department of Agriculture, Washington, D. C., has given the remedy, now make a combined effort to DESTROY THE ANT.

There are probably only a few colonies of ants on your premises. It would require a very small quantity of poison to destroy them.

Ant Poison Write Department of Agriculture, Washington, D. C., for Bulletin 740, in which appears the following formula for making Ant poison:

Granulated Sugar 15 lbs., water 7½ pints, Tartaric Acid (crystallized) ¼ oz. Boil all these ingredients together slowly for 30 minutes and allow them to cool. Then slowly dissolve ¾ oz. Sodium Arsenate (Na As O2) in ½ pint hot water. Allow this to cool, then add the syrup stirring thoroughly. Add 1½ pounds of pure honey to the syrup and the mixture is ready.

Mr. W. C. Cutler of Glendale, California, advises the following: Pulverize dry sawdust into fine particles. Saturate it with the syrup, dry it and again pulverize it. Then scatter it where the ants will carry it home.

We made some of this ant poison, carefully following the formula, and applied it by setting saucers or other small containers near the home of the ant or across their runway, and within a week our garden was clear of ants. Not an ant in the house all summer, nor on the trees, but it required watchfulness and application of poison whenever they reappeared.

We contemplated having this formula prepared and put up in containers to suit the small user, but find we cannot do so under the California laws.

Grasshopper Poison for Five Acres

Paris green (or white arsenic).....1 lb.
Molasses (cheap blackstrap preferably).....2 qts.
Lemons (or oranges).....½ doz.
Water4 gals.
Bran (or alfalfa meal).....25 lbs.
Grind lemons with meat grinder, mix all ingredients thoroughly. Spread thinly to avoid danger to livestock. Best spread in late afternoon.

Westrobac Nitrogen-Fixing Bacteria

"Living Nitrate Factories for Field and Garden"

Bred for the West (Westrobac) the Golden Medal Bacteria. Pure, Virile, Acclimated, Nitrogen gathering Bacteria.

Four ounces properly applied to the seed for an acre of ground will put as much nitrate into the soil as can be obtained in two tons of high grade commercial fertilizer with less labor and less expense.

This means profitable crops on poor or sandy soils, restoration of worn-out lands, increased crops on good lands.

WHAT THESE NITROGEN-FIXING BACTERIA WILL DO

1. These bacteria furnish the best and most valuable fertilizer in the world, in unlimited quantities and at only a nominal expenditure of money or labor.
2. They take nitrogen from the air, convert it into nitrates available for plant food, and then give it to the plant. In return the plant supplies them with carbohydrates, thereby enabling the bacteria to grow and reproduce themselves at an almost incredible rate.
3. They increase crops, under ordinary conditions from 25% to 60%, with no extra work. They make possible profitable crops on absolutely barren soil, such as sea sand or even coal ashes. They also improve the crops on good farm land.
4. They store up on the roots of plants the excess nitrates which the plant does not use. This is done in the form of nodules, varying in size from a mere speck to about a half inch in diameter. Official reports show this reserve supply of nitrates thus stored in the ground has been in some tested cases equal to 850 pounds per acre, or more nitrates than are contained in several tons of the average commercial fertilizer.
5. They gather moisture from the air at the same time they gather nitrogen, and also make it available for the future use of plants. This enables an inoculated field to withstand some droughts or dry seasons that would otherwise destroy the crop.
6. They work night and day making money for the farmer.

Cover Crops and Green Manuring Crops

1. Green Manuring is the practice of incorporation into the soil any green vegetable matter, which, upon decaying, becomes Humus.
2. The purpose of this practice is to increase and maintain the organic matter.
3. The most beneficial family of plants for this purpose are the Legumes.
4. But better than the Legumes are the Legume plants treated with Westrobac, because of their increased ability, through the agency of their bacteria, to draw nitrogen from the atmosphere and deposit it in the soil.
5. Legume plants when inoculated with their own bacteria make better top growth and a deeper and stronger root system.
6. The Clovers and Vetches decay more quickly than other plants, and are converted into Humus in the shortest period of time, usually about 30 days.
7. The deep roots of Legumes are able to bring up plant food from greater depth than the shallower roots of other plants.
8. "Westrobac" is the trade name of our product, a Pure Culture of Bacteria bred to order only, thereby assuring freshness and virility.
9. No danger of fungus or weed diseases in using Westrobac; it is absolutely pure.
10. A few moments only are required to apply Westrobac to the seed and the process is very simple.

Westrobac Has many thousands customers in California—five years ago it had only a few—the large number results from the success the few had at first and the subsequent users had later. Over 60 per cent of this year's business comes from former users. That tells the story of Westrobac's success.

A ton of stable manure adds to the soil less than 10 pounds of nitrogen—a tube of Westrobac that costs \$2.00 will add, when used with the proper seed, from 120 to 200 pounds of nitrogen per acre, at least 12 to 1 against stable manure. Nitrogen is one of the essentials of plant life and the element that in nearly all cases might be called the limiting factor—especially in California where our long hot summers bake and destroy the humus—and as nitrogen is available so is the land productive. If you have plenty of nitrogen you should have big crops, and when you can get this plant food at \$2.00 an acre, it is folly to take a chance of getting a small yield when you can have paying returns.

Over every acre you have 30,000 tons of nitrogen—why buy it in a sack when Westrobac can take it from the atmosphere and put it in the soil. It is easy to apply, a 10-year-old child can inoculate seed for one or five acres in a few minutes. No chance to do harm—only good—and only a few minutes required.

Do not apply the bacteria to the seed in the sunshine or expose to the sunshine to dry after mixing. Remember that strong sunshine kills every form of bacteria. The best results are obtained when planting is done in the early morning or late afternoon or on cloudy days. If you drill the seed in moist soil you can plant any time.

Nitrogen-Fixing Bacteria

is no longer an experiment, but an established fact. There are instances where its benefits were not apparent. This is due either to the fact that the soil was already inoculated, as with a crop of alfalfa or other legumes, or the soil contained alkali that is deadly to the nitrogen germ.



Nodules of Nitrogen Produced by Westrobac Available for Clovers, Alfalfa, Beans, Peas, Vetches, Lupines, Soy Beans, Burr Clover, Peanuts and all other Legumes.

The prices on Westrobac now in effect are as follows:

Garden Size	\$.50
100 acres and under ..	2.00 per acre
100 to 200 acres.....	2.00 " " less 5% cash discount
200 acres and over....	2.00 " " " 10% " "

This culture is bred in San Francisco laboratories especially for California soils. We do not put out any culture over thirty days old. It is our contention that the best results are only obtainable through the use of fresh, virile culture.

We are breeding the best commercial nitrogen culture on the market today and we are in no way competing with cheap Eastern cultures. In selling Westrobac, we are selling to our customers the very best.

Immediately upon reading this page consult us with regard to your requirements for the season that you may place your order for delivery about your time of planting. Fresh bacteria will then be made to your order at the time required.

The following offer was recently sent out from Washington, D. C.:

The United States Department of Agriculture, Washington, D. C., Bureau of Plant Industry

Soil-Bacteriology and Plant-Nutrition Investigations

This department offers free to any applicant a sample of inoculating material sufficient for the treatment of one bushel (60 pounds) of one kind of legume seed.

The liberal policy of this department is decidedly commendable.

Do not fail to avail yourself of this offer.

The circular also gives a list of thirteen states which make distribution within their boundaries. Among the thirteen states mentioned is Washington, Idaho and Oregon, unfortunately California is not one of them.

But this circular also prints the names of ten commercial companies manufacturing cultures for the inoculation of legumes. One of the ten is the Western Soil Bacteria Co. of San Francisco, which company manufactures the Westrobac.

For up-to-date information write Western Soil Bacteria Co., 620 So. Spring St., Los Angeles. Ask for "The Bug."

THIS CATALOG

By using small type and crowding space to the utmost we have endeavored to give full information concerning every item offered that may help you to success.

Your success depends much upon a wise selection of seed, but just as much upon intelligent culture.

Therefore we urge you to read every page of this catalog. Never in the history of the world was there such widespread demand for the products of the soil. Never was there such opportunity for the farmer. Never was such promise offered the young man to go on the farm. Our advice to the young man is—Read this catalog and wake up to the opportunities offered.

Soil Renovators Suitable for Winter Planting

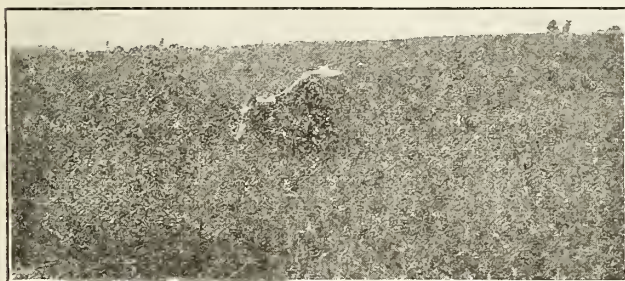
Scarcely more than ten years have passed since these two valuable clovers were considered as weeds to be despised. Their value is incalculable because they are supplying the deficiency in stable manure, giving better results with less expense.

MELILOTUS ALBA

For information concerning Melilotus Alba (Sweet Clover) write United States Department of Agriculture, Washington, D. C., for Farmers' Bulletins No. 797 and 820.

Two years ago we stated in this catalog that "Melilotus Alba" could reclaim all that waste of alkaline land lying east of Clearwater and afford good grazing while the land is being made valuable. Our advice brings good results.

The Montana Land Co. planted twenty acres with such satisfactory results that last fall they planted 600 acres.



(Sweet Clover) (Bokara) Melilotus Alba
Twenty Acres of Melilotus Alba. (October 15, 1919)
The above picture was taken on the ranch of Clarence Jennings at Clearwater

Melilotus Alba This is a valuable addition to the farm as a forage crop. When quite young, it may be pastured or cut and cured for hay. This should be done just before the bloom appears. It is hardier than alfalfa, more drouth-resistant, and better for renovating the soil. It may be cut twice the first season and three or four times the second season, yielding 2500 to 3000 pounds of hay each cutting. It is as easy as alfalfa to eradicate, is biennial. On account of its hardiness to resist extreme cold, heat and drouth it is grown largely in the middle west for pasture. It is highly recommended by the department of agriculture. **Lb. 60c postpaid.** Write for quantity price.

Melilotus Alba could reclaim all that waste of alkaline land lying east of Clearwater and afford good grazing while the land is being made valuable. On the beet ranch of the Montana Land Company just east of Hynes, was planted last year twenty acres to Melilotus alba with such gratifying results that this year they planted five hundred acres.

21 Reasons for Planting Melilotus Alba

1. It is not a weed.
2. Like alfalfa it is rich in protein.
3. Will not bloat cattle or sheep.
4. Equal to alfalfa for pasture.
5. Is a great milk producer.
6. Furnishes early spring pasture.
7. Contains more protein than red clover.
8. Fits well in the crop rotation.
9. Is a great soil enriching crop.
10. Better than any of the common clovers as a green manure crop.
11. Is a valuable plant for honey bees.
12. Prepares the soil for alfalfa.
13. Roots are soft and give no trouble in plowing.
14. Roots being tender become inoculated more readily than alfalfa.
15. Never damages cultivated crops.
16. Its roots decay rapidly, adding much nitrogen and humus to the soil.
17. Grows and will produce a crop in all parts of the United States.
18. Seeds freely in both humid and dry sections.
19. Sweet clover prevents erosion.
20. Will grow under conditions where clover and alfalfa fail:
 - (a) On land too low, too wet, or too alkaline for alfalfa;
 - (b) On land too hard and compact for alfalfa;
 - (c) On soil too poor for alfalfa, especially where there is lime.
21. It is immune to nematodes.

Now read again these twenty-one reasons for planting Melilotus Alba, and see wherein it suits your particular case.

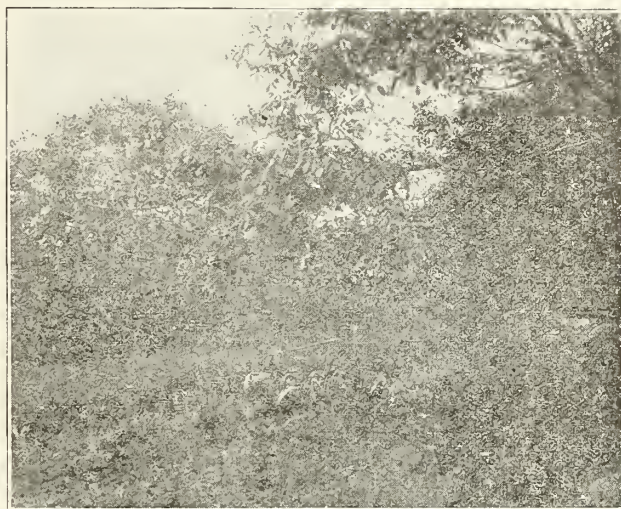
MELILOTUS ALBA FOR THE RANGE

Mr. Stockman, as soon as you read this send for some seed of this Sweet Clover and just to get a start sow at the rate of one pound per acre all over your range. On any kind of soil. If not pastured too closely you will soon have a valuable range for your stock.

The same advice applies also to Smilo. See page 65.

Sow also Burr Clover on heavy soil and Alfilaria on any kind of soil.

Melilotus Indica (yellow bloom)



Melilotus Indica in a Walnut Orchard

Melilotus Indica For information concerning Melilotus Indica, write University of California, College of Agriculture, Berkeley, Cal., for Circular 136.

Melilotus Indica was introduced by us in 1909, has now become recognized as the legume best adapted for green manuring in the orchards of California, because it may be planted late in the fall after all crops have been harvested, will grow all winter with only the season's rainfall.

It prevents erosion during the rainy season, is easily plowed under, is richer as a fertilizer and if allowed to stand until July will prevent much of the June drop.

Melilotus Indica is the best legume with which to build up your soil during the rainy season for the summer crop to follow, particularly potatoes and melons. Write for price.

Read what Mr. L. B. Doan of Burbank tells that four acres planted to potatoes without fertilizing, he harvested forty sacks per acre. He sowed melilotus on this four acres during September. Plowed it under in March and ten days after plowing he again planted potatoes and harvested 105 sacks per acre. He sowed Melilotus last fall.

Vetch For many years was considered the best legume for planting in orchards during the rainy season. It is only because Melilotus Indica is a little hardier that Vetch is now second place for that purpose; but Science has discovered a new use for Vetch. It is true that Oats have long been planted together with Vetch for the purpose of supporting the Vetch that it may be easy to harvest. Now the new discovery is that Vetch be planted with oats, wheat, rye and barley in order that the grain will be fertilized by the Nitrogen gathered at the roots of the Vetch thus greatly increasing your crop of grain, or if grown for hay it doubles the yield. Twenty to thirty pounds of grain sown with twenty pounds of Vetch per acre will yield more grain than sixty pounds of grain per acre if sown by itself.

Per lb. 25c postpaid. Write for quantity price.

Burr Clover The native Clover, and one of the best nitrogen-gathering crops and very satisfactory for orchards. There is an increasing demand for Burr Clover, and the seed is very scarce and hard to obtain. It is the very best cover crop for poor or dry land, as it needs but little moisture. If your grazing land lacks native grasses, plant Burr Clover; it re-seeds itself, starting to grow with the first rain, and continues growing far into the dry season. **(Per lb. 55c) postpaid; (10 lbs. 40c per lb.) f. o. b. here.**

Broad Windsor Bean Sometimes called Horse Beans, grows upright on a single stem bearing a profusion of large well filled pods. The roots are enormously productive of nitrogen. It will withstand 28° temperature; therefore, may be planted as late as September for best results as a winter cover crop. **Per lb. 25c postpaid. (Write for quantity price.)**

Mr. E. H. Mann of Oneals says, "The Broad Windsor Bean in my trial last year proved so much better than anything else that I have tried, that it seems it is just what I have been looking for the last seven years to grow on poor winter-wet but summer-dry soil."

The sowing of nitrogen-gathering plants for green manuring has become popular because of the excellent results attained and because of its cheapness as a fertilizer that its use is almost universal not only for orchards, but for fields, particularly where melons and potatoes are to be planted.

Soil Renovators for Summer Growing

Velvet Bean This bean has long been popular in the south as the best soil renovator, best for summer grazing, or cut and dried for winter forage for horses, cattle and hogs, or for the silo along with sorghums, with favorable soil and other conditions the velvet bean will exceed all other varieties of Cow Peas in tonnage of green feed or fertilizer. **30c per lb. postpaid.** Write for quantity price.

Whip-Poor-Will Cow Peas

This Southern Cow Pea has proven to be very satisfactory in this climate. It is a summer forage crop, or just the thing to grow in the late summer to plow under to enrich the soil for a crop of winter vegetables. **30c per lb., postpaid.** Write for quantity price.

Soy Beans

(See page 18.) These are wonderfully valuable as a soil crop because of their nitrogen gathering propensities. For Green manuring they should be plowed under when the pods are set. **(Per lb. 30c postpaid).** Write for quantity price.

Virginia Peanuts

(See page 42)

At our demonstration grounds the Whip-Poor-Will seemed to be in its proper element; its growth was luxuriant, exceeding other varieties. We have been selling it for twenty-five years and it has always proven entirely satisfactory.

Dry Farming Pays

With the present scientific method of dry farming as it is practiced today, every acre of land planted to winter or summer crops can be brought to yield 100% more than by the old method of scratching the surface. This assertion has been proven repeatedly, and practical recognition of this fact is doing much toward feeding and alleviating the suffering nations throughout the world.

This method of dry farming is scientifically pursued on all large bean ranches in California, and by all large beet growers throughout the southwest and on many grain ranches.

If dry farming is a practical success for the large grower it must be equally practical for the small grower. But the small grower is frequently too busy with his diversified farming to do the work necessary to properly prepare the soil for dry farming and therefore half of a small ranch is often unproductive the greater part of the year.

What others are doing you can do. Invest \$2.60 in a book—"Campbell's Scientific Dry Farming," offered on page 16; read it and practice its teachings, thereby increasing the value and productiveness of your land.

**An Invaluable Book for the Arid Farmer is
"CAMPBELL'S PROGRESSIVE AGRICULTURE"**
Price \$1.10 postpaid.

The following are some of the subjects: Farm Possibilities; Preparation Before Seeding; New Problem in Corn Culture; Time of Planting; Does Tillage Increase Fertility?; Summer Tillage for Wheat; Amount of Seed per Acre; Disking After Harvest.

Mr. H. W. Campbell practiced dry farming and reduced it to a science. His book entitled "Progressive Agriculture," is his latest publication in this educational work.

Mrs. Muriel Edwards of Santa Ynez, Cal., writes: "I am sending you samples of Sudan Grass and Corn. The taller specimen of Sudan Grass was grown on a clay loam. The shorter one on very gravelly loam. The soil for both the corn and the Sudan Grass was prepared as if for beans.

"I also have some wonderful barley that volunteered in the corn field. None of these crops received any irrigation, not a drop of water, only intensive cultivation.

"This land was supposed to be worn out and worthless."

What this lady can do, others can do.

This lady with intelligence and determination has by this demonstration enhanced the value of all lands in that mountainous section, and increased its productiveness 100%.



Whip-poor-will cow peas
The Best for Southern California

Alfalfa

Alfalfa Lucerne. This may well be called the King of Forage Plants; all stock relish it; may be grown in nearly every state in the Union and it is essential to the best interests of every rancher, small or large. To the "Little Lander" with a few chickens and rabbits, as well as to the large rancher with hundreds of cattle, horses and hogs. It may be cut and fed green; judicious grazing does not injure it. If mixed with sorghum in the silo, it improves the ensilage and as dry hay it is unexcelled. It is leguminous and, therefore, a soil renovator.

Cultivation is very simple, the essentials being well drained soil, good grading, thorough subsoiling, thorough watering and judicious harrowing; also proper fertilizing, especially on new ground.

Mr. C. Sebelius of Gardena, California, planted six acres to smooth Peruvian Alfalfa, and cut it six times the first year selling this crop for \$500. The second year he got \$120 for the first cutting and \$185 for the second cutting.

Drilling Alfalfa in rows and cultivating it seems like a waste of acreage and time, but Mr. E. B. Ames of Coachella Valley has demonstrated that it pays both as a hay crop and for seed.

Mr. Ames plants it two feet apart in rows 28 inches apart, it is irrigated and cultivated after each cutting. He gets two tons per acre each time it is cut for hay.

He allows it to seed each year, threshing more than the largest yields by the old method. The writer can testify that the branches bearing seed are full of large well filled pods from stem to tip. While by the old way, only a few pods ripen at the tips.

Evidently Mr. Ames is pursuing the proper method.

Certified Alfalfa Seed Pursuant to our policy of protecting the customer wherever possible we have gone to the expense of having our fields of Hairy and Smooth Peruvian Alfalfa inspected by the County Agricultural Agent. Every sack of seed is sealed by him with a tag which certifies it to be the variety indicated on the tag. No matter where you buy it look for the tag on every sack you buy. **Write for quantity price.**

Chilian or Common This variety has proven so entirely satisfactory to everyone for more than forty years that nothing better was looked for and is indeed now so thoroughly satisfactory that many will hesitate to believe that any variety of alfalfa can be better, therefore we have an ample supply of the Chilian seed. **(Lb. 70c) postpaid; (10 lbs. 55c per lb.) f. o. b. here.**

Smooth Peruvian Introduced by us a few years ago. Our claim to superiority over the Chilian was in the fact that it was harder, yielding one more cutting each year and more each cutting.

Being hollow stemmed it is softer and eaten entirely by stock. The leaves adhere to the stem after it is dry, adding greatly to its merit.

All of these claims held good and the smooth Peruvian rapidly grew in popularity and is now preferred by many satisfied growers. **(Lb. 80c) postpaid; (10 lbs. 65c per lb.) f. o. b. here.**

W. A. Mason, Turlock: "Last year I got 100 lbs. of Smooth Peruvian Alfalfa seed from you and sowed it on the 7th of February on 5¼ acres of sub-irrigated land and cut it 5 times and got 38¼ tons of fine hay. The last 3 cuttings going over 10 tons to the cutting. It was full of leaves to the bottom of stems. I sold it for \$15.00 per ton in the shock. Very good for the first year."

Hairy Peruvian Recommended by the Department of Agriculture as being more hardy than the smooth Peruvian and because it is more hardy, it has a longer growing season and will yield more tonnage per acre per year, and on that account is more valuable in some localities than in others. **(Lb. 85c) postpaid; (10 lbs. 70c per lb.) f. o. b. here.**

Alsike or Swedish Clover This is one of the hardiest varieties known. It is perennial and does not winter kill. It will do better on moist land than any other variety of clover, and is suitable for either hay or pasture. When sown with other grasses, it forms a thick undergrowth and greatly increases the yield. **Write for quantity price. (Price per lb. 30c postpaid.)**

Lespedeza or Japanese Clover (If interested, write the Department of Agriculture, Washington, D. C., and ask for Farmer's Bulletin No. 441.)

Lespedeza is a summer annual and grows from Central New Jersey, through all the southeastern states and Texas, and grows luxuriantly in the southwest under irrigation. It is a summer-growing crop, re-seeding itself. Lespedeza grows readily with Bermuda Grass and is just the thing to grow in meadows where Bermuda abounds. No danger of bloating stock that feed upon it.

Lespedeza and oats make an excellent combination, sowing the oats in the fall and the Lespedeza in March. After the oats have been harvested, the Lespedeza will yield two tons of hay per acre. It cures readily, drying in one day, and it is an excellent crop to rotate with cotton or corn. Sow 15 to 25 lbs. per acre. **Price (per lb. 70c) postpaid; (10 lbs. 55c lb.) f. o. b. here.**

Write for quantity price.

White Clover

For lawns. (See page 81.)

Grasses

If you are interested in maintaining a good range, write United States Department of Agriculture, for Bulletin No. 791. See A & M Bulletin No. 110.

Our latest organized effort to be of substantial benefit to the Great Southwest is to assist the Stockmen to find some valuable forage plants that will endure each and every condition that exists on the vast ranges of the desert and mountains that they may be covered with grasses that will maintain great herds of stock. Write us describing your conditions of soil, climate and moisture, we may be able to solve your problem.

The war has brought about a realization of the enormous waste of resources that passed unnoticed or if noticed little heed was given them.

One great source of waste exists in the barren condition of what are called desert lands; unirrigated lands, hill sides, swamp lands, alkali soils, and many other conditions.

We have given this much study and have concluded there is somewhere some good palatable grass suited to all these conditions so that if sufficient seed were obtainable these barren places could be made to support countless herds of cattle, goats and sheep.

After several years of application to this subject we have found a number of grasses and millets that are now growing on ranges and in places such as we have described. We do not have seed of all varieties in commercial quantities, therefore we offer ounces and pounds of various grasses that have proven practical for these purposes and conditions.

Therefore if you have any barren lands, or acreage that is unproductive, read carefully these pages devoted to grasses and clovers, and let no acreage be wasted.

In order that our salesmen and our customers may have first hand information by observation and records we have at the 1500 block on West 16th St. a plot of ground where we have during the summer grown sorghums, millets and grasses for comparative demonstration. We have now published a bulletin describing many of these grasses, suitable for the ranch and range. If interested write for this Bulletin No. 110, entitled Forage for Range and Ranch.



A view of our demonstration, 1500 block West 16th St. In foreground—Rhodes; medium high—Guinea; Tall Grass in background—Napier.

How to Plant Small Grass Seed

GETTING A STAND BY THE CORRUGATED SYSTEM

Many Stockmen have been deprived of valuable pasture for grazing because of the almost insurmountable difficulty to sow fine grass seeds and get a good stand.

Mr. Renfrew who has 320 acres of Rhodes Grass growing at Niland on the heaviest kind of alkaline soil situated on the border of Salton Sea kindly offers a satisfactory solution which we will try to explain.

Plow and thoroughly pulverize the soil, make as level as possible and grade it to a fall of 12 inches to a thousand feet. Sow the seed broadcast both east and west and again north and south. After the seed has been sown drag the field in straight lines from the higher toward the lower side with an ordinary drag having nailed to the bottom, three feet apart, pieces 4 x 4 beveled at the foreward end. This makes small irrigating ditches. This is called the corrugating system. Allow water to flow slowly and continually through the ditches each day until the seed has sprouted and the grass well established, after which time apply the water only when needed.



Guinea Napier
Just Five Months' Growth from Dormant Joint

Napier or Elephant Grass

We place this at the head of all grasses because of its wonderful possibilities. It is a succulent grass having high food value.

It is quickly established by planting joints in irrigated furrows. Within two months it may be pastured. At three months it may be cut for green feed, hay or silage and may be cut every four or six weeks if water is applied after such cutting.

It may be allowed to grow ten feet or taller, then let cattle browse it as severely as they will it will at once recover after the cattle are removed.

Napier will survive extreme drouth but with sufficient water it will produce more green succulent feed than any other grass. It will survive our winters, therefore it is the equal of any permanent pasture grass we have.

One joint planted April 1st, well watered, will stool freely and by June 1st may make 20 or more subdivisions that may on Aug. 1st, be again multiplied by 20 or more and again October 1st, so that one joint planted April 1st, will by October 1st produce 2000 or more plants. One dozen joints costing \$1.00, planted April 1st, may with proper irrigation and care produce by Oct. 1st, 96,000 plants sufficient to set out 25 acres, planted 3 feet apart in rows 4 feet apart. Cut this estimate in half and it is good enough.

(Per dozen joints \$1.00) (100 joints \$5.00) postpaid.



The Right Way to Plant Napier Joints

GRASSES—(Continued)

Merker Grass What has been said of Napier applies also to Merker, although there is a distinct difference in the appearance of the extreme types, they are so blended that authorities have become confused so that customers are getting one for the other. However with no material loss, for one is about as meritorious as the other.

From one packet of seed we grew five plants no two exactly alike. We are inclined to accept the conclusion of Mr. H. C. Davis of Lakeside (who has made an exhaustive study of this grass) to include all types under the name of Elephant Grass.

One type is as good as another and requires the same culture.

Alfilaria (*Erodium Cicutarium*). Cardinal points; **For the Range**—Any kind of soil—endures little alkali—native in Southwestern United States—Foliage disappears with extended drouth but roots survive and with sufficient moisture to start growth it will mature seed. With extended rainy season the growth of forage will cover the ground twelve inches or more—the forage is succulent and relished by all stock—it seeds freely and is a valuable range grass for winter and spring on desert or mesa; meadow or hillside—it requires little or no preparation of soil for seeding—rarely cut and dried for hay—easily eradicated. Five pounds of seed is sufficient to sow one acre broadcast.

Per lb. 85c postpaid. Write for quantity price.

J. H. Cook, Gila County, Arizona.

I have quite a bit of grazing land in West Texas and after the three years of drouth all the grass roots are dead and there is nothing but weeds. The plant I send you the seed of has completely covered this dry country and is growing to perfection and I have an idea it is the thing for West Texas. Please let me know if you have this seed.

This proved to be seed of Alfilaria.



One Plant Australian Saltbush Growing by the Roadside

Australian Salt Bush (*Atriplex semibaccatum*). Cardinal points: For range near the coast or interior low-lands where fogs are of frequent occurrence—any kind of soil—endures much alkali—thrives with a minimum of moisture—very succulent during winter, spring and early summer, then it is relished by all stock—becomes parched by heat in late summer, then it is less palatable to stock, but they will thrive if forced by hunger to eat it—it seeds freely. Requires no preparation of soil for seeding. Cannot cut and dry as hay has one tap root—easily eradicated. **Per lb. 75c postpaid.** Write for quantity price.

The best way to get a stand of Salt Bush is to sow broadcast the seed on sod or stubble during the months of January and February. Five pounds of seed will sow one acre broadcast.

SALT BUSH has made a new record which establishes a value. Heretofore, this has not been appreciated although for years we have tried to make plain that its principal use was for sheep and goat pasture.

Mr. Maurer, who has large interests in the San Clemente Islands, and maintains large herds of sheep and goats, states that were it not for the several hundred pounds of salt bush he purchased from us several years ago he would, undoubtedly, have lost his herd. If you have any waste land, sow Salt Bush; it may be depended upon when all else fails.

Fire may devastate the range and destroy all dry forage in its path, but the salt bush being perpetually green is absolutely uninjured by fire.

Bermuda Grass (*Cynodon dactylon*). Cardinal points: For damp meadows—any kind of soil—endures much alkali—good only for summer pasture—is dormant at a temperature of 35 degrees Fahrenheit—an excellent meadow range relished by all stock—it spreads and seeds freely—requires no preparation of soil for feeding—seldom cut and dried for hay. Is very difficult to eradicate—can be propagated by transplanting joints. Ten pounds of seed is sufficient to plant one acre broadcast. **Per lb. 85c postpaid.** Write for quantity price.

All authorities on Grasses devote extra space to the praise of Bermuda Grass, their claim is, its abundance of enduring rich pasture and all agree that it fertilizes the soil. It is easily controlled and worked to advantage by intelligent rotation.

Russian Brome Grass (*Bromus Inermis*) Bromus perennial grasses; no amount of cold will kill it. It withstands the severest drouth, and water may stand on it for weeks. It will grow on any kind of soil.

The following information is from Mr. Jas. C. Knollin, Editor, Orchard and Farm: During 1914 and '15 I had charge of a large farm in Wyandotte county (Eastern) Kansas, near Kansas City.

"There is a period of about two months, when feed in the pasture is usually very scarce. One spring we seeded a small patch in an old orchard, on a dry hill-side to brome-grass. This little patch supported five milch-cows all during the driest summer we had experienced in a long while, when there wasn't a spear of green grass to be found elsewhere in the large pasture. The cows seemed to be very fond of it and continued to browse it after the rains had freshened up the other grasses. It made a living patch of green on the barren hill-side all summer, and the cows seemed to be unable to keep it entirely eaten down."

It requires twenty pounds of seed per acre.

Price per lb. 60c postpaid.

Russian Brome Grass is essentially a pasture grass, but it also makes good hay. All kinds of stock are fond of it, and no other grass, unless it be orchard grass, will furnish grazing for so large a portion of the year. Its producing and feeding value for hay is about equal to that of Timothy.

It keeps alive under conditions that would destroy many other grasses and it will then grow vigorously when moisture is brought to it. It can be made to render excellent service in states where the rainfall is not more than 12 to 15 inches.

BROME GRASS comprises a large family of well known grasses. Among them is Rescue Grass (*Unioloides*), Cheat (*secalinus*), Soft Brome, Fringed Brome, and Wild Chess.

Cocksfoot (*Dactylis glomerata*) also called Orchard Grass. Mr. Adolph Moritzson, a grass and seed expert, says of it:

"Fifty years ago the Bank's Peninsula of New Zealand was a wilderness. Nothing worth while grew there. The country was worth nothing as a grazing land for cattle or sheep. Then came the grass that made New Zealand. Cocksfoot was sown on this ground, and in a few years the region became one of the best grazing districts in New Zealand.

Cocksfoot will grow well under a wide variety of conditions. It is not a particularly drouth resistant grass, but it readily adapts itself to nearly all types of soils. For forty years it has thrived on the rocky and hilly lands of New Zealand. Where other grasses died out it produced luxuriant crops of grass. It is a stooling plant. It seeds freely and any bare spots on the ground are soon seeded by the plant itself. According to Mr. Moritzson, the plants grow three to five feet high. It is not easily killed out by close grazing as many pasture and ranch grasses are. But it does require an average amount of rainfall. Five or six weeks of very dry weather would not kill the crop, he thinks, but that number of months would probably be too much for the plant.

The feeding value of Cocksfoot is very high. Cattle and sheep are shipped considerable distances into the Bank's Peninsula districts to be fattened. They get no feed except cocksfoot, yet they bring as good prices on the market as grain-fed animals." This is a good testimony for the grass.

This grass does well sown either with or without other grasses. It is frequently sown in such pasture mixtures as white clover, red clover and rye grass. If sown alone, 25 or 30 pounds of the Cocksfoot seed will insure a good stand of grass.

Keep the cattle away from the grass until it is well established. Otherwise the young plants may be eaten so close and trampled so much that they will die. After the grass once makes a good growth the danger of this is slight.

Per lb. 60c postpaid. Write for quantity price.

Guinea Grass (*Panicum Jumentorum*) This grass does not seed well in this climate but should be propagated by dividing the clumps, this should be done during April or May. It quickly grows and is ready for first cutting in eight weeks and may be cut every six weeks, or may be pastured. It is deemed advisable to allow all growth after October 1st remain in order to protect the crowns during the winter. It is one of the most nutritious of grasses. It is said that it will fatten a thin full grown steer within six months.

We have a limited number of crowns which we divide and offer these divided crowns at **\$1.00 per doz.**



Para Grass the second season without irrigation, grown in a vacant lot in the City of Los Angeles

Para Grass

Cardinal points—Excellent for swamp or overflow lands or with irrigation—any kind of soil that has sufficient moisture—endures little alkali—roots survive winter and months of drouth—foliage is dormant in winter but will grow three or four feet high in the spring until checked by drouth—with irrigation grows rampantly, may be cut and dried for hay every four weeks—it is relished by all stock—seeds not at all in this climate—is propagated by transplanting

joints or stems—difficult to eradicate from damp land. There is no seed available. We offer stems. (Per 100 stems 75c) postpaid) (1000 stems \$4.00 f. o. b. here).

Dr. Wm. R. Livingston of Oxnard, California, writes: "I have many hundreds of acres of Para Grass in Mexico, where we consider it the most valuable forage plant. I have worked 200 mules at a time, feeding them freshly cut Para, as roughage with some corn. I know of no other green plant that will sustain working animals; the amount of forage per acre is enormous."

Holcus Lanatus Known by a different name in every country in which it grows. In England, as *Yorkshire Fog*; in the New England States as *Salem Grass* and *White Timothy*; in the South, *Velvet Grass*, and *Mesquit Grass*. It also has Dutch, Danish, Swedish and French names.

Probably no other grass is so widely known. This, no doubt, is because it will thrive on soils too poor to grow many other grasses. It is said to be more nutritious than Timothy or Orchard Grass.

On rich soil it will grow two to three feet tall. It is perennial even withstanding zero weather. It is not advisable to cultivate it where better grasses will grow but it will thrive in damp meadows where other grasses fail. Price per lb. 60c postpaid. Write for quantity price.

Perennial Rye Grass (*Lolium Perenne*) Also called *Australian Rye*. Probably the oldest cultivated grass in existence having been in cultivation previous to 1677, and is yet grown for pasture probably as extensively as any other grass. It quickly covers the ground with a dense mat of foliage ten inches deep with seed stems twenty inches high. It is perennial but endures seldom beyond the third year. It is an ideal crop for rotation.

Sow in the fall with barley, oats, wheat or alfalfa, to be pastured. It is excellent for fattening cattle. Sow 20 pounds per acre. Per lb. 40c postpaid.

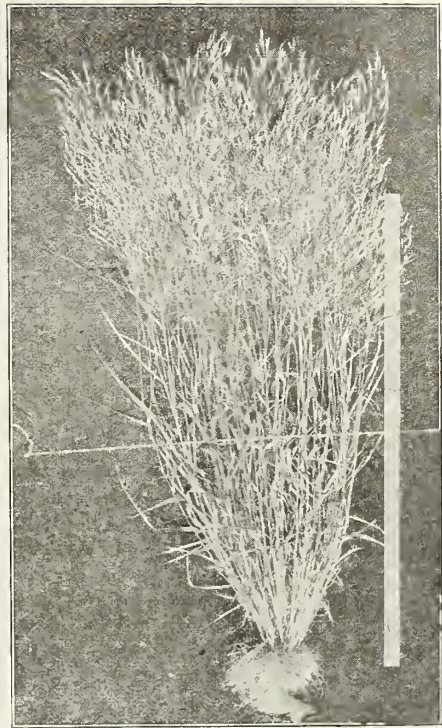
Italian Rye Grass (*Lolium Italicum*) Arrives earlier at maturity than Perennial and produces a large amount of nutritious herbage. Its duration being but two or three years, it is not adapted for permanent pastures yet highly valuable for rotation of crops. It is specially adapted for sowing in Autumn with oats, barley, rye, or clover, as a catch-crop for fattening stock. Per lb. 40c postpaid.

READ THIS

From the interviews we have had we are surprised to learn how many people fail to know the grazing value of native grasses growing about their immediate neighborhood, and often considered worthless weeds.

The following are a few of these: Australian Salt Bush, may be cured and stacked, goats relish it. Wild Morning Glory and Non-poisonous Night Shade are excellent pasture for goats. Winter Fat, apparently a specie of sage grows abundantly on high mountain sides, is relished by all kinds of stock. A little attention to this may sometimes tide you over.

Johnson Grass All authorities agree that this grass is of great value. This we do not deny, but when Johnson Grass takes possession it is master and the owner must run his ranch accordingly. The expense and annoyance necessary to eradicate Johnson Grass deteriorates the value of any land foul with it.



Smilo Grass (*Oryzopsis millacea*). Cardinal points: Not particular as to soil—a hardy evergreen perennial—drouth-resistant bunch grass—thrives on dry hills, among rocks and brush and under trees—it will grow under all conditions any time of the year on high cliffs or on decomposed granite banks, but is most luxuriant and productive when cultivated on good soil.

Stools and seeds freely—may be propagated by transplanting divided stools. It is an ideal range grass for Southwestern United States. One ounce of seed will grow sufficient plants to set one acre.

Per (oz. 50c) (¼ lb. \$1.00) (lb. \$3.00).

Plant any time during the rainy season, sow seed or set plants.

The above picture was taken August 15th. This plant was grown from a divided crown set April 15th. On December 1st, after several rains, the ground was covered with grass that had grown from seed of the plants set out in April.

We have a plot of Smilo Grass that must be moved. We therefore offer divided crowns at \$4.00 per 1000 prepaid.

If interested write for price on larger quantity.

A field or range of Smilo furnishes a permanent pasture or may be cut for hay.

Mr. Stockman: You may want to place a tank at a spring somewhere on your range and would like to know how large a tank you will need. The following table gives the capacity of a tank of a given size. Know the number of cattle you have and estimate that each head will require five gallons per day.

A tank 6 feet in diameter and 8 feet deep holds 1976 gallons and would keep 100 cattle four days, 25 cattle 15 days. The next size, 8x8, holds 2000 gallons.

Tanks of the diameters given below hold the following number of gallons for each foot in depth:

A tank 6 feet in diameter holds.....	247 gals. per ft.
A tank 3 feet in diameter holds.....	375 gals. per ft.
A tank 9 feet in diameter holds.....	475 gals. per ft.
A tank 10 feet in diameter holds.....	586 gals. per ft.
A tank 11 feet in diameter holds.....	710 gals. per ft.
A tank 13 feet in diameter holds.....	992 gals. per ft.
A tank 15 feet in diameter holds.....	1321 gals. per ft.
A tank 20 feet in diameter holds.....	2349 gals. per ft.
A tank 25 feet in diameter holds.....	3670 gals. per ft.
A tank 30 feet in diameter holds.....	5080 gals. per ft.

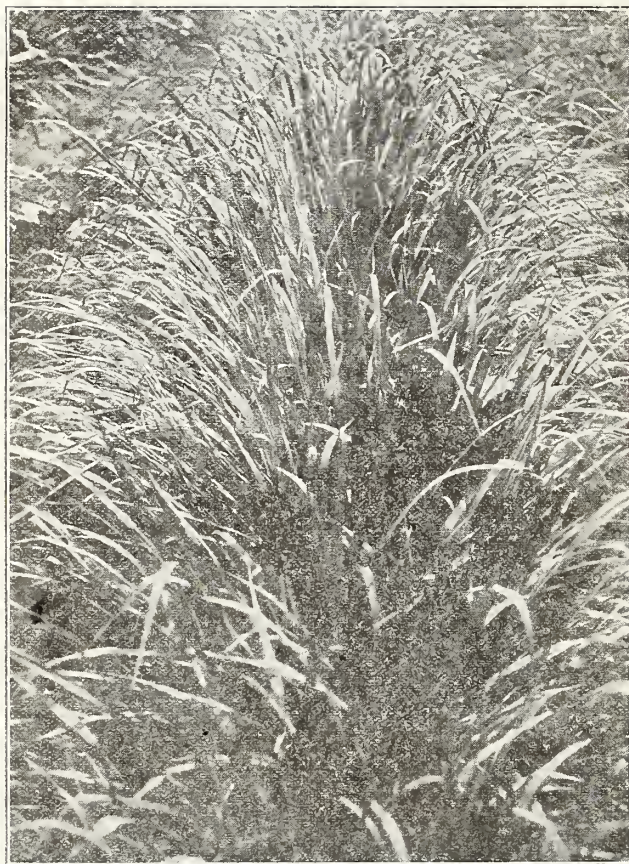
Figured on the above basis, a cistern 15 feet in diameter and 10 feet high would hold 13,210 gallons. A cistern 20 feet in diameter and 15 feet high would hold 35,235 gallons.

MRS. MINNIE PECKINPAUGH, Arizona

Your wonderful 1919 catalog came a short time ago and I wish to thank you for it, as it contains such workable information. I have always found your seeds do best for me and the hints you throw out always work. I was a green city girl but now have the best garden in our part of the country, and others are following your advice. I am going to take the agricultural courses given by the California University, thanks to you.

SUDAN

Write College of Agriculture, Berkeley, Cal., for Bulletin No. 277



Paspalum Dilatum

Paspalum Dilatum Cardinal points: Any kind of soil—endures little alkali—excellent for permanent pasture—marsh or mesa—grows winter and summer with moisture—excellent for hay—may be cut every four or five weeks—foliage dies with drouth but revives with less moisture than any other grass—stools and seeds freely—may be transplanted from subdivided stools—it has been tried and proven in this section to be one of the best of grasses for permanent pasture in meadow or on mesa where it must depend solely upon the season's rains. Paspalum planted on ridges between alfalfa checks, the first season only demonstrated it would grow throughout the winter. The second season proved its worth. It had seeded to a wonderful degree. The seed grew, taking root among the weeds and devil grass, choking out everything in its way. The dense tufts of grass made a thick mat capable of supporting the cattle on marsh land. The stock relish it fully as well as alfalfa. It makes a fine hay free from any wood. It is as easy to eradicate as timothy or any other grass.

Ten pounds is sufficient to sow one acre broadcast.

Per lb. \$1.00 postpaid. Write for quantity price.

GIANT WILD RYE GRASS

(*Elymus condensatus*)

Not particular as to soil—endures much alkali—grows luxuriantly in meadows, along a sandy wash, on hillsides with brush, on rich loam, on a clay mesa or amid the sage and greasewood—will endure zero temperature—with only slight precipitation of rain it will mature seed which affords food when all else has disappeared or has been covered with snow.

Price per lb. \$1.00 postpaid.

COMPLIMENTARY

DR. W. R. LIVINGSTON, Oxnard, Cal.

I have now also a liberal supply of Para Grass. One plant in the yard has made good growth and is now five feet high. On some very moist land near Oxnard, I have planted some this last spring that has also made considerable growth. I will plant a larger area next year. We have been growing it here now, for seven years and it has always lived through the winter. I believe here on the coast where there is plenty of water or the air is moist, Para will prove a useful forage plant.



Sudan Grass

Sudan Grass Has made good and has become more popular each year. Cardinal points: Not particular as to soil—endures much alkali—an annual—planted during April first cutting in sixty days may yield four tons of dry hay per acre and three to four tons may be cut each thirty days until October.

Twelve pounds of seed is required to plant an acre in order to produce hay of fine quality.

The seed may be planted with a Superior beet drill or other drill with extra plate or broadcast.

Sudan Grass thrives with excessive moisture and endures extreme drouth. The foregoing points are not all the best features of this grass. In the months of August and September, when all other grass is dry, then is the time that Sudan is most valuable for fall pasture for cattle and hogs. For milch cows and hogs there is no better or more abundant pasture than Sudan. We believe it will solve the hay proposition as nothing else can do in this climate.

Sudan Grass is ideal for growing with the Whip-poor-will Cow Peas. The stem is stiff enough to support the vines, and the mixture makes a better balanced ration for the stock. It is a good silage.

Per lb. 40c postpaid. Write for quantity price.

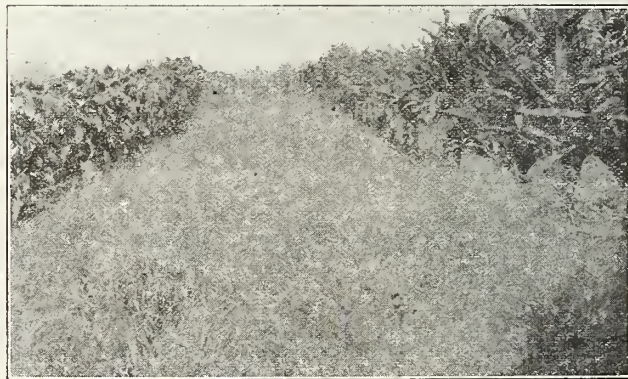
Teff Grass (*Eragrostis Abyssinica*). Cardinal points: Not particular as to soil—endures much alkali—valuable range grass under trees, on hillsides—an annual—seeds freely—ideal for meadow or mesa.

Our demonstration would indicate that Teff is ideal for a quick growing crop of hay. One lb. of seed per acre sowed May 1st, and again in Sept. and Oct. and yield at least two tons per cutting. More extravagant claims have been made, but we base our statement upon our observation.

The root system is shallow and would be up-rooted if pastured when the ground is soft.

We do not know of any better grass for a summer hay crop. The seed is very small.

($\frac{1}{4}$ oz. 20c) (1 oz. 50c) ($\frac{1}{4}$ lb. \$1.00) (lb. \$3.00).



TEFF GRASS

Timothy Does very well in moist land and will mature a fine crop of hay in 110 days from seed. We do not recommend it for Southern California. Per lb. 35c postpaid. Write for quantity price.

GRASSES—(Continued)



This Plant of Rhodes Grass was taken from our plot just three months after planting of one joint. This picture shows only one-half the number of rooted joints.

Write U. S. Department of Agriculture for Bulletin No. 1548.

Rhodes Grass For first hand information, we are indebted to Mr. O. J. Renfrew, who, with Mr. W. D. Beatty have 320 acres of Rhodes Grass growing at Niland, Cal. The soil is heavy and salty, for this land borders on the Salton Sea. They are cutting it six times a year and two tons per cutting.

After two years experience with Rhodes Grass, Mr. Renfrew says of it: "It is a plant which thrives well in warm climate. It is perennial in a temperature above 18 degrees and thrives at 125 degrees. It stands drouth remarkably and will endure much neglect and pasturing. It does not scald in hot weather from excessive moisture like alfalfa. It is highest in protein of any grass tried. Stock like it and will not show bloat."

Rhodes Grass will drive out Bermuda and other weeds because of its dense growth. It is easily eradicated by being ploughed once and let stand for sixty or ninety days. It adds humus to the soil.

The best time to plant Rhodes Grass is from March 1st to September 1st.

The soil must be well prepared by thorough pulverizing, then corrugated (see page 1). Broadcast 14 pounds of seed per acre, going over the field twice, once north and south and east and west, sowing 7 pounds each way. Keep the soil continually moistened until the grass is established. It grows so rapidly that the first cutting may be had the ninth week. Do not pasture until after the second cutting.

Price (lb. \$1.00 postpaid). Write for quantity price.



We do not believe we can overestimate the merits of Rhodes Grass

Red Top (*Agrostis vulgaris*) Red Top is a perennial grass which grows from a few inches to five feet in height under varying conditions of soil and climate. But the average height is probably 18 to 20 inches.

Before the introduction of timothy, it was a chief reliance for hay. Since that time, is grown for pasture, alone or in mixtures where meadows are more or less permanent. It is now more highly esteemed as a pasture grass than a hay plant, because of its power to endure, and because of the degree of its permanency, but in many areas it is still considered an important hay plant.

No useful grass in America will grow on a greater variety of soils and yet some soils have far higher adaptation for red top than others. Highest in adaptation probably, are the tide lands which border on the Atlantic and the Pacific. Next in adaptation come the slough lands composed largely of humus, or river bottoms, made up of alluvial soils considerably tempered with clay.

No other useful grass would seem so well adapted for being grown in wet situations, even in places so moist, as to be saturated with water for a considerable portion of the late autumn and the early spring. It will even stand shallow submergence for several days, when the weather is cool; and for a longer period than almost any other useful grass, when it is warm.

The soil should be carefully prepared. Thoroughly pulverized and clean of weeds. Sow broadcast 14 lbs. of seed per acre.

Price per lb. 45c postpaid.

AN INTRODUCTORY MIXTURE FOR TRIAL ON ANY RANGE IN THE SOUTHWEST

From observation of this demonstration and other grasses growing elsewhere, we suggest the following mixtures that should prove satisfactory if sown in places as recommended.

The quantities stated are sufficient to make a good start.

The varieties chosen are calculated to meet any condition of soil likely to be found; on hillsides, in glens, on the mesa, in the meadow, by the brook, in the wash and along the coast.

	Postpaid Per lb.	10 lbs.
1 lb. Sweet Clover (<i>Melilotus Alba</i>) any soil....	.60	\$.55
1 lb. Australian Salt Bush (<i>Atriplex semibaccatum</i>) on alkali soil and near the coast.....	.75	.65
1 lb. Alfalfa (<i>Erodium cicutarium</i>) any soil....	.85	.80
1 lb. Smilo (<i>Oryzopsis Miliacea</i>) any soil.....	3.00	2.50
1 lb. Wild Rye (<i>Elymus condensatus</i>) any soil.	1.00	.90
1 lb. Burr Clover, soil preferably heavy.....	.55	.50
1 lb. Rhodes (<i>Chloris virgata</i>) preferably heavy	1.00	.90
1 lb. Paspalum dilatatum, preferably heavy.....	1.00	.90
1 lb. Teff (<i>Eragrostis abyssinica</i>), preferably heavy	3.00	2.50

We recommend the following to be a good mixture for the desert, mountain or valley.

	Postpaid Per lb.	10 lbs.
1 lb. Alfalfa (<i>Erodium cicutarium</i>) any soil..	\$.85	\$.80
1 lb. Smilo (<i>Oryzopsis Miliacea</i>) any soil.....	3.00	2.50
1 lb. Sweet Clover (<i>Melilotus Alba</i>) any soil....	.60	.55

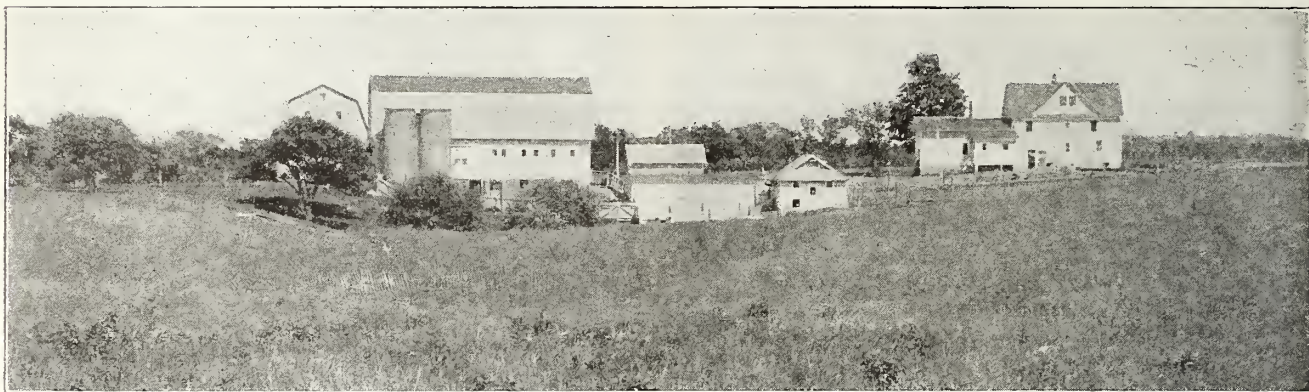
We recommend the following to be a good mixture for a permanent pasture on any meadow.

	Postpaid Per lb.	10 lbs.
1 lb. Paspalum dilatatum	\$1.00	\$.90
1 lb. Rhodes (<i>Chloris virgata</i>).....	1.00	.90
1 lb. Italian Rye (<i>Lolium Italicum</i>) .....	.40	.35
1 lb. Cocksfoot (<i>Dactylis glomerata</i>) (orchard grass) .....	.60	.55
1 lb. Bromis inermis .....	.60	.55
1 lb. Red Top (<i>Agrostus Vulgaris</i>) .....	.45	.40

We offer any complete mixture at the quantity price. Read carefully the description of each one and be sure to try the one best suited to your soil condition.

The Silo

Write Department of Agriculture, Berkeley, Cal., for Circular No. 138, September, 1915, by Professor F. W. Woll; also Circular No. 173; also Bulletin No. 282, issued August, 1917.



THE MODEL FARM

This picture is continued from our last year's catalog because now as never before is the suggestion more applicable. At the present time more big capital is being invested in agricultural development and farm improvements than ever before.

This picture is given space that it may suggest to you when you contemplate improving your homestead that you will consider your location from a sanitary point of view, thus saving you many thousand dollars worth of stock and doctor bills, besides giving health and leisure to your family.

The above picture shows scientifically up-to-date farm buildings situated on an ideal location with regard to drainage.

All storm water drains away from the house, away from the barn, chicken and hog pen, far into the field where it will do the most good. This farmer need not worry about his stock or poultry no matter how hard it rains. There will be no pools of water about the premises to become stagnant mud holes that breed diseases for the stock and ill health for the family.

Aside from sanitary considerations this picture shows an ideal plan for farm buildings.

The house fronting the main highway; the garage a convenient distance away; the large barn built on an embankment where it will be easy to drive into the barn floor, under which the stock are comfortably stabled.

The hog pen and chicken houses are built apart from other buildings for sanitary purposes.

The large silos could not have been located at a more convenient place.

If there is no naturally drained location on your land, the Fresno scraper will do much toward making such a location.

The Silo A Big Money-saver. If you have ten or more head of stock, it will be profitable for you to have a silo. Therefore, if interested write at once to the University of California, College of Agriculture, Berkeley, California, for circular No. 138 (Sept., 1915), entitled "The Silo in California." It is complete in its information and after reading it you have all the information you will need, and you will at once go about building a silo. Just the size you will require, and you will know about what it will cost. This circular tells you what crops are best and what proportion of water to add; what stage of maturity crops may be cut; in short, the information in the circular is so complete you cannot make any mistake, from the building of the silo to the time when the silage is ready to feed to the stock.

BEST CROPS FOR SILAGE

Now that you have a silo you want to grow the best and most productive crops to fill the silo. Indian Corn heads the list, as recommended by the Dept., and we recommend the Orange County Prolific Corn as the most productive of tonnage and highest in saccharine; Hickory King follows, these varieties yielding 20 to 30 tons of silage per acre. For the silo Indian Corn should be cut when the grain begins to harden.

Next to Indian Corn, Dwarf Milo is recommended as the best non-saccharine sorghum because of its wonderful stooiling propensity and enormous yield of grain.

The Wonder Forage Plant (Sudan-Sorghum) excels all other crops in enormous yield of excellent forage for the silo. (See page 70.)

Next in line is Silver Tip Sorghum, Texas Seeded Ribbon Cane and Honey Dew Sorghum.

OBSERVATION

Pursuant to our policy of educating our employees and as much of the public as are interested in this particular line, we have at considerable trouble and expense planted fifty-seven varieties of Millets, Grasses, Sorghums, Corn, etc.

It is our purpose to maintain this plot indefinitely. We cordially invite all who are interested to visit it on the 1500 block West 16th St.

This demonstration plainly suggested that the following observations are facts to be relied upon; that it is unsafe to plant sorghums April 1st in heavy clay soil. The soil was properly prepared; the seed germinated well and started well with a normal growth. The latter part of April and early May the weather was foggy and cold. The soil became packed and hard just beneath the plant where it could not be loosened and the more water we applied the harder it packed. The result was that all headed prematurely with stunted growth.

We advise planting sorghums after May 1st.

Until three feet tall Schrock's Kafir showed most luxuriant growth. Next and almost as good was Feterita and White Milo.

Dwarf Milo easily leads in production of grain.

Shallu is the tallest of this class and, undoubtedly, the best as a second cropper—the canes are smaller and multiply enormously when cut back.

Of the saccharine sorghums, Silver Tip greatly exceeded the others in the number of stools and the height, which would indicate more tonnage, and Mr. McWilliams, a manufacturer of syrup, says that Silver Tip is superior for this purpose.

Texas Seeded Ribbon Cane ranks next.

While Early Amber grows taller, Honey Sorghum stools more and will equal it in tonnage of green feed and excels it in quantity of grain.

The Kaoliang was planted too late for a comparative test but is satisfactory at this writing.

Japanese sugar cane: Planted joints May 1st, are now only getting started but we are advised by reliable authority that it will eventually excel all others. It is perennial.

However, of all the Sorghums, Saccharine and Non-saccharine, the Wonder Forage Plant easily excels all varieties in rapid growth of by far the greatest number of stools which multiply enormously when cut back. It is a good second and even a third cropper.

The canes are very sweet but have not been tested for Sorghum. Mr. McConnell of Lankershim says he had been feeding his dairy cows green alfalfa, cocoanut and cotton meal and the butter fat was 4.2. He is now feeding nothing but green Wonder Forage Plant and the fat increased to 4.6.

We asked Mr. Pellisier, President, of the Los Angeles Creamery Company, if we exaggerated when we stated that Wonder Forage excels all other varieties two-fold, and replied, "Not a bit."

THE SIZE OF SILO TO BUILD

No. of Cows	Pounds Required Daily	Size of Silo Diam. Feet	Needed Height Feet	Cap. Tons
6	340	9	20	22
9	360	10	24	34
13	520	10	30	47
15	600	12	26	55
20	800	12	32	74
25	1000	12	38	94
30	1200	14	34	109
35	1400	14	38	128
40	1600	16	34	143
45	1800	16	38	167
50	2000	16	40	180

Based on 40 lbs. per cow a day.

One ton of hay requires 500 cubic feet of storage space, while one ton of silage requires only 50 cubic feet.

The best dairymen feed about forty pounds of ensilage, with two pounds each of bran and oil meal daily to each cow in order to secure the maximum milk production.

Field Corn

Increase Your Acreage

A NEW CONDITION

That Governs the Price of Seed Corn

Since the coming of the silo a new condition has come upon us. A readjustment must be made to keep down the high cost of corn. Before the silo, corn was valued according to the yield of grain and the various varieties were gauged from that point of view, but since the coming of the silo varieties are valued according to the tonnage of silage they will produce.

The silo has caused an enormous increase in acreage planted to corn, but a deplorable scarcity in the supply of corn either for seed or for food.

It is true the Southwest can import corn for feed but we should grow enough for both feed and silage. The farmer says: "I can grow silage and get more money per acre; I can buy my seed cheaper than I can raise it."

The result is a scarcity of seed corn, particularly those silage varieties which we cannot import.

ANOTHER FACTOR that figures in the scarcity of seed corn is that the varieties that are in greatest demand for the silo are not harvested for seed, nor when grown for seed do some of them yield up to the average crop of grain.

Another factor in the present scarcity of seed is that owing to a dry year our crop of 160 acres contracted for seed was a total failure as were many other acres not grown for seed.

Therefore the scarcity of seed corn in general and of certain varieties in particular will necessitate higher prices; particularly does this effect the varieties planted for silage.

In order to determine the best varieties for ensilage we grew at our demonstration plot several promising varieties under irrigation with the result that we recommend these ranking in the order named.

Branching Corn, Orange County Prolific, Eureka Ensilage, Red Cob Ensilage, Hickory King, Mexican June.

We are listing only those varieties that have proven entirely satisfactory under our climatic and soil condition and for the purpose the crop is intended. All varieties except Branching Corn. (Lb. 20¢) postpaid. Write for quantity price.

WHITE DENT

Orange County Prolific, for grain and silage.....	110 days
Eureka Ensilage, for silage.....	120 days
Hickory King, for grain and silage.....	110 days
Champion White Pearl, for grain.....	110 days
Iowa Silver Mine, for grain.....	110 days
Wisconsin White Dent, for grain.....	110 days
Red Cob Ensilage, for grain and silage.....	100 days
Mexican June, for grain, dry farming.....	100 days

YELLOW DENT

Reids Yellow Dent, for grain.....	100 days
Golden Beauty, for grain.....	100 days
Minnesota King, for grain.....	100 days
Pride of the North, for grain, dry farming.....	90 days
King of the Earliest, for grain, dry farming.....	90 days
King Philip Flint, for grain, dry farming.....	90 days

Read This—When grown without irrigation our Pride of the North, Mexican June and King of the Earliest varieties are the most dependable. They are always a sure crop because of their extreme earliness, and they surprise the grower because of the great yield of grain.

THE SILO IN IMPERIAL VALLEY

Chiefly through the influence of the county farm bureau and Federal and State agricultural experts, silos and sorghums are transforming Imperial Valley pastures and grazing lands into intensive dairy and hog raising ranches. Methods of feeding stock have greatly changed during the year 1917. Dairy cattle, hogs and sheep are now largely stall fed, instead of being turned out into vast pastures unattended. The change has worked wonders with the farmers' check books.

It is estimated that more than \$8,000,000 gross was received this year by valley farmers for butter, beef, hogs and sheep. The stock industry is second only to cotton raising. County Farm Adviser Sullivan is confident that more than a million dollars will be added to this figure during next year because of the adoption of the Kansas style of feeding.

Tall silos now dot the landscape of the valley. More than three score were erected during the past three months. They were erected principally to take adequate care of thousands of acres of silage planted under the direction of the farm bureau. The silage propaganda of the farm bureau this year was directed towards the development of the sorghums, which seem more adapted to the interior valleys, with their warm summer climate. This should be emulated in other counties.

About Corn.—More than 2,000,000 bushels of corn is produced in California annually, yet this is scarcely half enough to meet the local demand. This condition ought not exist because there is ample acreage where corn may be grown under irrigation, and near the Coast where it may be grown without irrigation. Where corn cannot be irrigated, plant the "King of the Earliest" variety.



BRANCHING CORN

The largest corn stalk you ever saw. Two ears on main stem and five branches with one ear on each branch

Branching Corn This new variety is undoubtedly one of the best for ensilage. It does not stool as other corn but branches from each joint. The branches stand erect like a cluster of corn stalks each branch bearing an ear of corn at the tip.

In a field of five acres, no stalk had less than two ears, many had seven and some eleven. About 50% of the entire field of corn was branching. The better the soil the more profusely it branched.

We are recommending this variety for the silo. (Lb. 50¢) (10 lbs. \$4.00)

SACCHARINE SORGHUM OR CANE

It is usually planted in rows $3\frac{1}{2}$ feet apart, using from 6 to 10 pounds of seed per acre. Grows from 10 to 15 feet high.

This kind of Sorghum is distinguished from the Non-Saccharine because it is from these varieties that syrup is made.

Write College of Agriculture, University of California, Berkeley, California, ask for Circular No. 198. Concerning syrup from sorghum.

But these Sorghums are more generally grown for forage because they will thrive well with little moisture, but on good soil with irrigation will produce 30 to 40 tons of silage per acre.

Address: University of California, College of Agriculture, Berkeley, Cal. Ask for Circular No. 167, also Bulletin No. 293.

At our demonstration of Sorghums the Silver Tip out-classed all other varieties for tonnage of green fodder. Texas Seeded Ribbon Cane was next in line. It stools but is more branching.

Silver Tip

The Sorghum for syrup. Mr. McWilliams, a manufacturer of Sorghum syrup, residing near Norwalk, says: "The Silver Tip excels all other Sorghums in quantity and quality of syrup. A yield of 400 gallons per acre was the average obtained from my field. It will yield 20 tons of silage at one cutting. It is later in maturity than other varieties so that only the first cutting can be used for syrup."

(Per lb. 25c) postpaid. Write for quantity price.

Honey Sorghum

This variety was only recently introduced into California and at once proved to be very desirable because of the large yield of grain as well as enormous growth of forage.

It is given special recommendation in the Farm Bureau Monthly and has proven highly satisfactory to all who grew it last year. (Per lb. 35c) postpaid. Write for quantity price.

Early Amber

The Early Amber has been grown in California for more than thirty years and always proven entirely satisfactory. It grows twelve feet tall when allowed to mature but it stools to a wonderful extent when cut about every four weeks.

(Per lb. 25c) postpaid. Write for quantity price.

Texas Seeded Ribbon Cane

Texas Seeded Ribbon Cane is one of the best crops that can be grown to use as ensilage on account of the enormous yield it makes per acre.

"Land is too valuable to get from 5 to 10 tons of silage from, when the same acres can yield 30 to 35 tons per acre with same expense. Others have received these results and any farmer can do the same." Per lb. 25c postpaid. Write for quantity price.

A Word About Amber Cane

Mr. R. N. Atmore, of Piru, Cal., is authority for the following statement: "For more than twenty years I have planted sorghum about the first of April. About the time it is well seeded I have some hogs ready to fatten for the market. I turn the hogs into the field of Amber Cane every day toward evening. In this way they eat all they want without waste, and about the time it is all gone the hogs are ready for market. This is all the feed they get for fattening. Saves me much labor, and the exercise is healthful for the hogs. I sow one acre of Amber Cane for every twenty hogs."

If you need forage for your horses, cattle or hogs Sorghum planted about April 1st will furnish you the best feed in the shortest space of time. One half acre will feed four head of stock all summer if only enough is cut each day for one day's need. In this way one can cut continuously all summer. As much as 40 tons may be cut from one acre.

It usually yields three cuttings a season, but it should be wilted before feeding as it is liable to bloat. The sugar it contains is very fattening. Steers and hogs can be brought to prime condition with no other feed.

WHEN TO HARVEST SORGHUMS FOR SILAGE

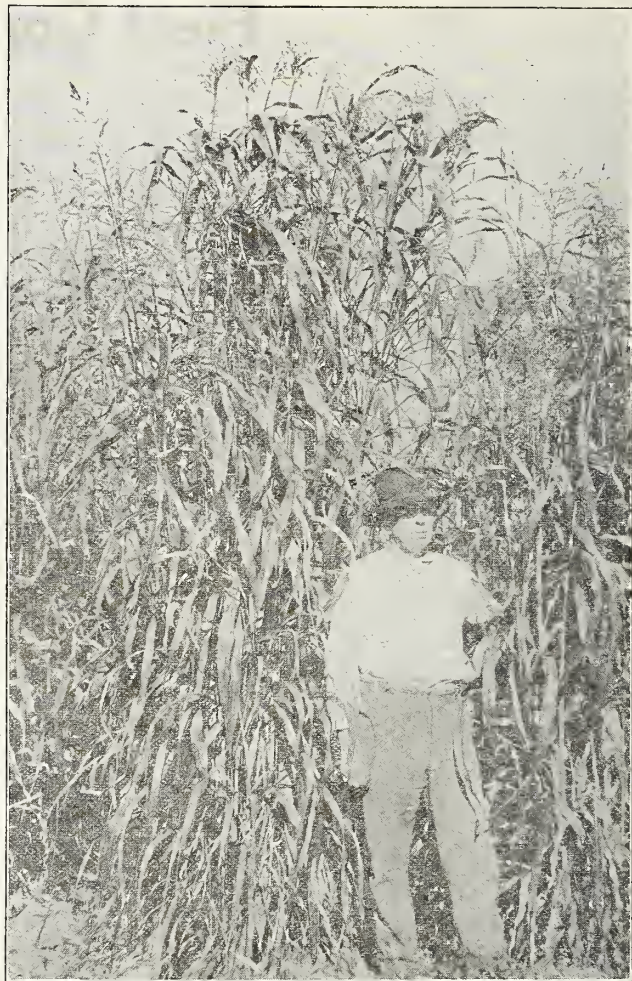
This year for the first time many farmers are growing sorghum for silage. The question of when to cut it is now perplexing some. The experience of farmers who have grown this crop for silage purposes is that it should be fairly mature before cutting. The stalks may look rather dry but sorghums should not be cut for silage until the seeds are hard. If cut too early the silage is apt to be acid and much inferior to silage cut at the right time.

MUST HAVE MORE COWS PER ACRE, SAYS HUNT

"Davis, Nov. 21.—The dairy industry is facing a crisis. Dean Hunt of the University of California, College of Agriculture told delegates to the California Creamery Operators convention.

Production per acre has not appreciably increased in America during recent years, Dean Hunt said, and while in Holland there is an average of twenty-nine cows to 100 acres of land, in California the average is eight. He said in order to keep pace with ever-broadening demands it would be necessary for California agriculturists to adopt intensive methods."

We do not hesitate to state that the Wonder Forage Plant for Silage, the Elephant Grass for a permanent pasture where water may be applied when needed, and Melilotus Alba either on damp or on semi-arid lands will do more to help out the situation than any other crops.



Wonder Forage Plant

Sudan—Sorghum

THE WONDER FORAGE PLANT. The crop for the silo. 60 tons of silage per acre. Surely a boon to Dairymen and Stockmen. This valuable forage plant first appeared during the summer of 1916 on the ranch of Mr. Benedict in Riverside County. Mr. Benedict realized he had something extraordinary; he therefore saved all the seed from this one plant and in 1917 grew a small plot that further convinced him and his neighbors that he had a wonderful forage plant. The seed from this plot was carefully harvested and in 1918 a field of ten acres was grown. This field by a roadside attracted the attention of all persons who passed. It has been visited by government experts who have given favorable expression as to its merits. For want of more exact history we express the opinion that it is the result of a cross pollenization between Amber Cane and Sudan Grass because it has the appearance of gigantic growth of Sudan and the seed is very similar to Amber Cane. It stools from ten to forty full sized stems the thickness of a thumb and smaller. When the main stems mature, separate branches grow from each joint forming other seed-heads.

The stems are succulent and sweet as saccharine cane, not dry as non-saccharine cane, therefore it is as good as sorghum for dairy cows. Stock will eat every particle of it and when shredded or cut for the silo it is ideal silage analysis. Our demonstration clearly indicates the Wonder Forage Plant will yield more than double the tonnage of any other sorghum. Seed planted April 3rd, the plants averaged six feet high on June 1st, on August 1st were 12 feet high and ready for the silo. Plants cut July 1st produced a good second crop. Its growth was not checked by the cold weather during April as were other sorghums growing beside it. Cultivate as a sorghum, 5 lbs. of seed is sufficient for one acre. Price of seed, 60c per lb. postpaid.

Dr. W. K. Livingston writes concerning the Wonder Forage Plant:

"I regard it as a truly wonderful forage plant and will plant what seed I have next year. I hope then to have a surplus to offer you.

If you have chickens, rabbits, goats, horses or cattle, have a range of Napier or have a plot that can be cut whenever desired. With an abundance of water, no other plant will grow so much green succulent feed in so short a time.

Non-Saccharine Crops for Grain and Forage

All prices are subject to market change

If larger quantities are wanted by mail send the necessary postage. See inside front cover page. Dwarf Milo Maize heads the list for grain, and Feterita a close second. These crops are given special mention because being drouth-resistant they grow very well in the southwest.

Non-Saccharine Sorghums follow in choice for silage with Dwarf Milo in the lead because of the enormous yield of grain adding much to the value of the silage. Feterita yields more tonnage but less nutritive value. These should be cut after the seed is hard, never when green.

For full information concerning Sorghums write College of Agriculture, University of California, Berkeley, California. Ask for Circulars No. 187 and 177. Also Bulletins No. 278 and 293. Also circular entitled: "Precaution Against Poisoning by Johnson Grass and Other Sorghums."

Write U. S. Department of Agriculture, Washington, D. C., for Bulletins No. 383, No. 698, No. 972, No. 827.



Actual Photograph Dwarf Milo Maize
6000 lbs. of grain per acre.

57 Heads on This One Stool of Dwarf Milo
Grown by Wm. Kruger, Woodlake, Cal.



Schrock Kafir

Dwarf Milo Maize The King of all Sorghums for Grain. Is much preferred to the tall variety because it stools wonderfully and matures a large head of seed on each stool, producing 3500 pounds of grain per acre, and the stalk being shorter and having more foliage, makes it more desirable for fodder. Dairymen find that the cows will give more and richer milk when fed on it. It is the right crop to plant in young orchards because it will not shade the small trees.

We have Dwarf Milo Maize grown from pedigreed stock. For the past four years the heads were carefully selected in the field before harvesting. Now we have a strain that grows about four feet high and produces forty per cent more than it did three years ago under the same climatic and soil conditions.

It is highly recommended by the state Department of Agriculture for silage. (Per lb. 25c) postpaid.

Mr. W. W. Fletcher of Lindsay, California, writes: "I wish to state that the Dwarf Milo Maize I received from you last year yielded over 6000 lbs. of grain per acre; much more than you claimed for it."

SMUT

The sorghum, kafirs and related plants are frequently attacked by a fungus which causes the destruction of the kernel. This is known as kernel smut.

Since the disease is carried on the seed, seed treatment is an effective remedy. It is sufficient to immerse the seed for a few minutes in a solution of formaldehyde and water. The solution used is one pint or pound of formaline, or 40 per cent formaldehyde, in 30 gallons of water.

DWARF MILO

One man can attend to the planting, irrigation, and cultivation of 160 acres, paying only for the harvesting and threshing. The cash outlay to grow 160 acres is approximately \$800.00. The gross returns, estimating one ton of seed per acre which sold last season for \$60.00 per ton, would be \$9,600.00. This is a very conservative estimate.

NOTICE READ THIS KAFIR SCHROCK Wonderful for Fodder and Grain

Mr. B. F. Taylor of Los Angeles called our attention to this wonderful addition to the saccharine sorghums. He says that he harvested about 6000 pounds of grain from approximately one acre; that is away ahead of anything else in that line both for grain and forage.

The stalks are green until frost, long after other sorghums have dried up. It excels as a pasture and makes excellent fodder. It will mature a crop of seed under conditions where other sorghum will fail.

ITS GREAT MERITS

The stalks are sweet. Cattle eat it down to the roots. Horses gnaw it to the last piece. Stock will leave alfalfa for it. Stock prefers it to sweetest hay. Seldom yields less than 3000 lbs. per acre. Frequently yields as high as 6000 lbs. per acre. When planted early will produce two crops. It is of dwarf growing habit. Is very stalky. Very nutritious as a silage. Greater drought resister than Feterita. Matures with exceptional uniformity. Fields are remarkable for even growth. Branch heads keep coming up till frost. Grown from 3½ to 5 feet high. Very easy to handle in harvesting. It never lodges or droops its heads. Better seed producer than any of the Sorghums. It is almost bird-proof; they will not destroy mature seed. Sow 10 lbs. per acre. (Lb. 30c) (10 lbs. \$2.50) postpaid; (100 lbs. \$15.00) f. o. b. here.

WHAT SILAGE IS WORTH AT A FEED

One hundred sixty-five pounds of corn silage will replace 145 pounds of shelled corn and 359 pounds of hay in producing 100 pounds of beef. These figures were arrived at as a result of eight years of feeding tests made at the Indiana experiment station, according to advices recently received at Minnesota University farm. With corn at \$1.75 silage is worth \$12.50 a ton.



was grown by Wm. Kruger, Woodlake, Cal.

Feterita Of the many non-saccharine sorghums offered in this book—none have proven more popular from the start than Feterita, on account of its astonishing growth after it becomes well rooted. Every testimonial received expresses astonishment at its rapid growth.

The grain has about the same feeding value as Egyptian Corn or Milo Maize; yields from two to three tons of grain per acre. It is bothered very little by birds, as they are unable to shell it out and waste it. The seed is more susceptible to cold than other sorghums, therefore should not be planted so early, nor should it be planted in cold soil.

The second growth stools wonderfully, producing several tons of excellent forage for pasture or for ensilage after the seed has been harvested. It thrives luxuriantly on soil so alkaline that field corn will not thrive. The heads are upright. **Price—per (lb. 25c prepaid) (10 lbs. \$1.00) f. o. b. here. Write for quantity price.**

J. A. Clipper, Imperial Valley, advises 12 pounds of seed per acre drilled two feet apart, by so doing it yields 5000 to 6000 pounds of grain per acre.

Egyptian Corn Like the preceding fodder crops, it is grown chiefly for the foliage to pasture when young, but yields largely of grain. The chief merit of these fodder crops is in their hardness to produce fodder and grain with almost no rainfall or irrigation. Sow eight pounds per acre drilled. **Price—per (lb. 25c) postpaid (10 lbs. \$1.00) f. o. b. here. Write for quantity price.**

White Milo Our demonstrations of Sorghums showed White Milo to be similar to Feterita in growth and in production of seed with an inclination to be more branching.

It is taller than dwarf Milo. The seed is pure white, not as round nor as large as Feterita. **(Per lb. 25c) postpaid. Write for quantity price.**

Kafir Corn Grows similar to the Milo Maize except the head is upright instead of hanging over like Milo Maize and Egyptian Corn. It will yield two to three thousand pounds of grain per acre. Sow 8 pounds of seed per acre drilled. **Price—per (lb. 25c) prepaid. Write for quantity price.**



This picture shows Shallu at its best—12 feet high and maturing seed early in July

Shallu At our demonstration, Shallu tillered more than any other sorghum except the Wonder Forage Plant. The second growth was particularly fine. We would place Shallu at the head of non-saccharine sorghums were it not for the destruction of seed by birds. It is hardly possible to harvest a crop of seed where birds are at all numerous.

Shallu will thrive luxuriantly in extreme Alkaline soils.

Both the green stalks or the ripe grain are greedily eaten by all kinds of stock from horses to chickens.

(Per lb. 25c) postpaid. Write for quantity price.

Mr. de Venelle: "I planted 15 lbs. of your Shallu and harvested 1900 lbs. of grain and 50 tons of fodder, without irrigation."

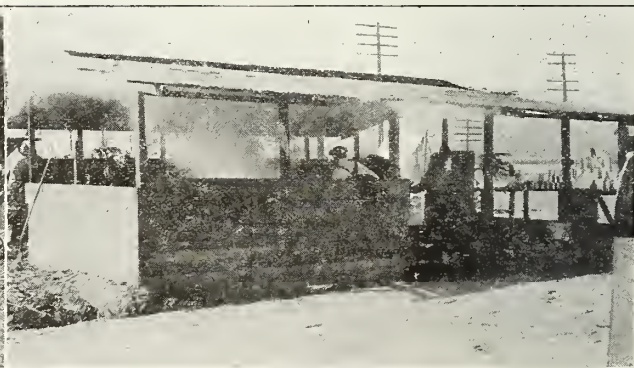
Mr. E. S. Cook, Imperial Valley: "It grows as thrifty on alkali soil as any other; it produces from two to three tons of seed per acre."

POISONING BY SORGHUM: Many are reluctant to feed Sorghum for fear of poisoning stock, but we herewith give the facts:

When cut before flowering, it must be allowed to wilt in the sun for several hours before being fed to the stock at this stage it contains a proportion of prussic acid and liable to be poisonous. This disappears after the flowering stage is reached. This poisonous quality is more noticeable in the second crop, or, when after a period of drouth or frost when young it has become stunted. In the form of properly prepared silage or dry fodder, Sorghum is never poisonous, but it is dangerous to pasture or to feed green sorghum after it has been frosted or stunted; it should then be cut and dried or ensilaged.

Higera A prolific grain sorghum that has come into favor wherever it has been grown. The grain resembles White Kafir. Do not fail to try it. We have a limited supply of seed.

Price per lb. 25c postpaid. Write for quantity price.



CUTTING THE HIGH COST OF SUGAR

Mr. W. W. Gates of Lankershim is manufacturing Sorghum syrup at the rate of 150 gallons per day at his mill by the San Fernando Blvd.

Mr. Gates says, "SILVER TIP SORGHUM is far ahead of other varieties for this purpose."

MILLETS

Write for quantity prices on all varieties.

Millets would be grown more extensively were it not for the destruction by birds.

Therefore in order to get best results it is important that you plant the variety best suited to your purpose.

In order to acquaint ourselves with the characteristics of each variety that we may give intelligent advice we planted eleven varieties on our demonstration plot.

The conclusions are as follows:

Russian Millet, Hog Millet If moisture is lacking in the shortest space of time, plant Red Russian, or Hog Millet, there is a very slight difference and both may be pastured within six weeks; both mature seed within sixty days, grows three to four feet tall. This seed may be harvested by heading and a second crop will mature within another thirty days. Vulnerable to birds. We recommend it for pasture only. 25c lb. postpaid.

Japanese Millet Grows rapidly four to five feet tall, branches freely with liberal foliage, matures seed within seventy-five days, seeds freely, vulnerable to birds. We recommend it for early pasture or to cut repeatedly for hay. 30c lb. postpaid.

White Wonder Millet Grows four feet tall bearing large heads covered profusely with bristles which repels attacks by birds. It does not stool freely but branches to some extent. The stems are strong enough to support the heavy heads. We recommend sowing this variety to be grown for grain for small chicks.

Golden Millet Grows three to four feet tall, branches freely and is enormously prolific of seed. The heads are covered with small bristles but are vulnerable to birds. Where birds can be controlled this is probably the best variety to grow for seed. Where moisture is scarce this is a good variety to grow for pasture.

From one field of sixty acres of Golden Millet growing for seed we harvested only 1200 pounds. 25c lb. postpaid.

Pencilaria Grows eight to ten feet tall having heads eight to ten inches long prolific of seed that is hard and not eaten greedily by any kind of stock. When young the enormous growth of foliage is succulent but becomes coarse and objectionable and should be silaged before feeding.

We recommend this variety for green feed to cut when two to three feet tall. It is eaten greedily by all stock and poultry. 40c lb. postpaid.

Chinese Millet Grows four feet tall, having strong stems to support the enormous heads of grain. Although unprotected, the birds do not bother it where other grain is available.

We recommend planting it for grain and to sow thirty pounds of seed per acre broadcast.

Of the other varieties tried out Brown Top and Indian Millet proved superior forage crops but seed may not be obtained in commercial quantities. We can offer these varieties only in ounce packages at 15c per pkt.



White Wonder Golden Chinese

GROW HEMP, RAPE, SUNFLOWER AND CANARY SEED

The high prices that are likely to prevail indefinitely would justify planting large acreage to these crops. The one drawback is the destruction by birds. All are easily grown and harvested, but plant at least fifty acres, in order that you may have a carload of grain, or unite with your neighbors to grow a carload.

Many of these crops should be planted during December and January.



Plant Sunflower for Windbreak

Mammoth Russian Sunflower should be planted largely for seed or ensilage. It makes a good windbreak around your garden. It is a valuable plant that grows anywhere with little attention.

1 lb. 25c postpaid. Write for quantity price.

Write for our circular on Burbank's New Standard Grains.

Rape Thousands of sacks of rape seed are imported each year, while it grows wild in some localities of Southern California. It is a profitable and easy crop to grow and harvest. If interested see us about it. (Per lb. 25c prepaid). Write for quantity price.

Canary This can be grown quite successfully here. It is just as easily grown as barley, and requires the same cultural treatment. Several carloads are imported each year into Los Angeles. The consumption throughout the United States is enormous. All of this could be grown in California. If interested, write or see us about it. Per lb. 35c postpaid. Write for quantity price.

Hemp What has been said here of Canary is applicable also to Hemp. It is easily grown and requires about 100 days to mature a crop. It requires sixty pounds of seed to plant an acre, and should be sown in February. If interested, write or see us about it. Per lb. 30c postpaid. Write for quantity price.

COMPLIMENTARY

DR. W. R. LIVINGSTON, Oxnard, Cal.

Last spring I purchased from you some Elephant or Merker Grass. One was planted in my yard and then it began to stool. I transplanted the young stools and now have forty plants which have made magnificent growth. The canes are now from eight feet to ten feet high, and from twenty to fifty stools on each root.

I wish to use these canes for further propagation next year because it has made such a good growth that I intend to plant a considerable acreage.

If this catalog pleases you, tell your neighbor to send for one.

Grain and Field Crops

When field seeds are desired by mail, add the required postage. See inside front cover page.

Write for quantity prices on all grains.

With our up-to-date facilities for cleaning all kinds of seed, we aim to have all field seeds as clean and free from foul seeds as it is possible to make them.

Grain and other field seeds that pass in the open market as clean will often show ten per cent or more of broken grain, foul seeds, chaff and dirt. Should our prices appear higher than others, you will find upon investigation that they are cheaper, because of the purity of the seed.

Legal Weights—Pounds per Bushel

Barley	48	Clover Seed ..	60	Potatoes	60
Beans	60	Millet	50	Rye	55
Corn	56	Oats	32	Wheat	60

Write the Dept. of Agriculture, Washington, D. C. Ask for Farmers Bulletin 939. Subject "Cereal Smuts and the Disinfection of seed grain."

Treating Grain Seed for Smut

Formulas for Bluestone-Lime

1. Dissolve 1 pound of bluestone (copper sulphate) in 4 gallons of water, which must be held in a wooden trough or tub.

2. Dip the seed, contained in half sacks or butts, for three to five minutes in the bluestone solution. Shake out the air as the sacks soak.

3. Drain the sacks for 15 minutes, and then dip in lime solution, prepared by slaking 1 pound of quicklime in 8 gallons of water. If the lime solution becomes blue, replenish with a new solution.

4. Dry thoroughly before storing.

When barley is treated with this solution, or when the lime dip is not used after the bluestone treatment, use 1 pound of bluestone to 5 gallons of water. Wash seed in water before dipping in bluestone where the lime dip is omitted.

Before dipping the seed in bluestone the smut balls must be washed out by pouring the wheat slowly into water and stirring it, when the balls may be skimmed off the surface.

Wheat

Write for Price

It is important then that growers give attention to the description in order that they will plant the variety best suited to their locality with regard to soil and climatic conditions.

Defiance One big drawback against growing wheat in California has been rust, but this has been largely overcome by planting the **Defiance** variety where cool, moist weather conditions prevail. This variety is practically rust-proof.

Defiance is a late wheat and should be planted early and seeded thin. It is non-shattering and classed as a hard white wheat, and number one for milling.

Twenty-five acres grown by Mr. A. F. Thirlwall, Chino, averaged 60 bushels per acre.

Sonora This variety is recommended because of large yield, earliness and drought resistance. It is susceptible to rust and inclined to shatter but it has long been a standard variety in Southern California back from the coast. It is classed as a soft white wheat.

Early Baart Another season has demonstrated that Early Baart Wheat is the right variety for the interior valleys. Favorable reports have come from San Joaquin and Imperial indicating that this variety will yield 20 sacks per acre under dry conditions that would impair other crops.

BUNYIP WHEAT

Bunyip wheat is smooth headed, and in general appearance is not unlike white Australia. It has a very stiff straw and stands up well. Several fields of Bunyip that have been ripe for 50 days show no broken straws and very little shelled out.

Several ranchers have planted it in scattered localities of the San Joaquin and Sacramento valleys and every farmer who thus far has planted it, is saving seed this year for himself and neighbors.

In all cases it has shown up well both in yield and quantity.

QUALITY WHEAT

Mr. Burbank's Description: It is a superior, early, hard white wheat suited to all climates wherever wheat can be grown; as a Summer wheat in cold far Northern climates and as a Winter crop in the United States and most wheat-growing countries. It is specially adapted also to short seasons, arid soils, and dry climates. A superior white milling wheat which makes the best light, sweet, nutritious bread and pastry.

For general culture, with its unusual hardness and extreme earliness, uniformity, superior milling and bread-making qualities, it stands alone. The heads are of medium size, tapering to a point, beardless, and on ordinary land stand three and one-half to four feet in height. No trace of disease of any nature so far has ever affected it here.

The chemical analysis and baking test of the new "Quality" wheat shows its unusual value.

Mr. Walker says: "The Quality Wheat turned out at the rate of ninety pounds for every pound planted."

Price prepaid (1/2 lb. \$1.00) (1 lb. \$1.75) (5 lbs. \$7.50).

Not over five pounds sold to one person.

QUANTITY WHEAT

Mr. Burbank's description: It is a tremendous yielder, having long, drooping, well-filled heads laden with extra large, fat, light-colored berries. It has a stiff four-foot straw which stands up bravely with its long, heavy, well-filled heads averaging on ordinary soils five to six and sometimes seven inches in length. No good wheat yields more than "Quantity." It is remarkably true to type and yields nearly twice as much as the ordinary wheats. "Quantity" is medium early and will prove its tremendous yielding abilities in any except the most Northern latitudes.

Mr. Walker says: "The Quantity turned out one hundred and four pounds for every pound planted."

Price postpaid (1/2 lb. \$1.00) (1 lb. \$1.75) (5 lbs. \$7.50).

Not over five pounds sold to one person.

BAYAH WHEAT

A very early variety. Also highly recommended by the Sperry Flour Company, who describe it as having heavy stems that bear up well under heavy heads. It is remarkable also because of its propensity for stooling.

A NEW OAT—"WHITE AVALANCHE"

Mr. Burbank's description: "An extremely early, very productive oat of the very best quality as well as a heavy yielder. It should take the place of most of the various common oats now grown. Start right, get pure, uniform "White Avalanche" oat seed. A field of this when ripening appears almost as white as snow; three to four feet in growth in all oat climates, even those having an unusually short season."

Mr. Walker says: "The White Avalanche Oats yielded ninety-three bushels to the acre."

Price postpaid (1 lb. 40c) (2 lbs. 70c) (3 lbs. \$1.00).

Not over three pounds sold to one person.

"ECLIPSE" OATS

Mr. Burbank's description: "The heaviest yielder of both hay and oats of any tested on my grounds. Foliage, on good soil, almost like corn leaves, sometimes one and a half to two inches wide. Early and unusually productive of thin hulled, heavy white oats of finest milling quality.

Eclipse oats may be sown in the Fall in mild climates; in the Spring in cold climates."

Mr. Walker says: "The Eclipse Oats yielded 88 bushels per acre."

Price postpaid (1 lb. 40c) (2 lbs. 70c) (3 lbs. \$1.00).

Not over three pounds sold to one person.

Barley

Sow 50 to 60 lbs. per acre

We aim always to have the best it is possible to procure. We cannot fix a price because of the fluctuations of the market.

Bearded Barley, Beardless Barley and Bald Barley. Write for prices.

TRY THIS

One rancher whose name we can not recall, told us that he sows his barley early and cuts it three times for hay; each time before the heads appear, and then allows it to head out for grain. Try it.

MISSION BARLEY

The standard for California since old mission days, and has not been excelled by any variety since that time. It stools to a wonderful degree. If you are looking for clean heavy seed see us about it.

MARIOUT BARLEY

The Department of Agriculture says, in Bulletin No. 312, regarding Mariout:

"It is said to have been extensively grown by the Romans during their occupation of the Mariut Lake region, south of Alexandria, Egypt, and skirting the Sahara Desert. While governing this region, referred to in Roman literature as Mareotis, the Romans made some pioneer advances in the art of dry farming, and their quick perception of the drought-resistant properties of Mariout barley is but another evidence of the acumen of this race in matters pertaining to agriculture.

In order to try out this variety, we have obtained a few hundred pounds from a grower at Davis, Calif., who was recommended to us by the Agricultural College. Our selling price will be \$14.00 per 100 pounds, or, in small lots, 20 cents per pound.

It is claimed this is a better variety than the common coast Barley for the hot and dry interior valleys of California. Mariout is more drought resistant than common Barley, ripens from 10 to 20 days in advance of common, and will yield more and better grain on dry soils.

Oats

Sow 70 to 100 lbs. per acre

Texas Red (Rust Proof)—This is the only variety that is profitable to plant here. We have this on hand during the planting season.

Texas Red Oats—Grown in Texas.

Texas Red Oats—Grown in California. Write for prices.

We reclean all our Texas Oats to eliminate any Johnson Grass.

GRAIN AND FIELD CROPS—(Continued)

Flax

If interested write the U. S. Dept. of Agri., Washington, D. C., for Farmers Bulletin No. 785.

Russian Flax will undoubtedly grow as luxuriantly in the Imperial and San Joaquin Valleys as it does in San Luis Obispo County, where it is at its best and yields about two tons of seed per acre. This at a normal value of \$2.25 per hundred pounds, f. o. b. San Francisco, means \$90.00 per acre to the grower, less the freight. This is better than what and corn, and no more expensive to grow. Sow 40 pounds of seed per acre. It requires the same culture as barley.

Price—(40c per lb. prepaid). Write for quantity price.

Rice

If interested ask for further information.

Rice growing as an industry is now established in certain sections of California. It is now only a matter of local conditions.

If interested write to United States Department of Agriculture at Washington, D. C., for Farmer's Bulletin No. 688, and Circular No. 97.

The variety, now accepted as the best for California, is the **Wataribune**, an early variety imported from Japan.

Price—(Per lb. 30c prepaid) (10 lbs. \$1.50) f. o. b. here. Write for quantity price.

Rice is now grown in such widely distributed territory throughout California that it is evident we have the climate and it is only a matter of local condition. Therefore if you have clay hard-pan soil with duck ponds and tule, just grade it so it can be flooded and sow rice. Apparently the more alkali the better.

The Montana Land Co. last season, experimented with such land with the result they will plant several hundred acres this year.

If you have a piece of waste alkaline land where water is available sow Rice.

We offer, subject to being unsold, three early varieties described as follows:

Wataribune, an early variety from Japan.

No. 1600—An early bearded variety. The birds are less destructive to this variety on account of the beards. The straw is firm and it holds up well.

No. 1564—An early beardless variety which holds up well. Our grower states we can guarantee this seed to be free from water grass.

Price (lb. 30c) postpaid. Write for quantity price.

Tobacco

GROW YOUR OWN SMOKING TOBACCO

If Interested Consult Us About the Culture

One ounce of seed is sufficient to plant an acre.

Kavala This is the finest of the Turkish Varieties. (Pkt. 10c) (oz. 50c).

Pennsylvania Broadleaf The largest known variety. At our demonstration plot we grew leaves that measured 40 inches long, 28 inches wide. In Pennsylvania this variety developed leaves 44 inches long and 36 inches wide. It is the best variety to grow in the home garden for use in the chicken house or other insecticide purpose. Also if handled properly makes a good smoking tobacco for the pipe. (Pkt. 10c) (oz. 50c).

Cotton

When in the market for cotton seed take into consideration your locality, with regard to distance from the coast and other climatic conditions.

We advise against planting long staple varieties near the coast.

We also advise that you avoid buying seed in the open market, but insist upon getting pedigreed seed and seed that was grown in sections free from the boll weevil; there is little danger from this because your county horticultural inspector will protect you against seed from infested districts.

Write for price on the following varieties:

MEBANE—Short staple.

DURANGO—Short staple.

LONE STAR—Short staple.

EGYPTIAN LONG STAPLE.

COMPLIMENTARY

L. E. CHENOWETH, Bakersfield, Cal.

At this time I wish to say that I had well nigh perfect results with all seeds ordered from you. The Excell watermelon broke all records with me as did the Los Angeles market muskmelon. The seed germinated almost 100% all the way through and my future orders will come to you as a result.

Winter Rye

Sow 60 lbs. per Acre

Although Rye is sown largely for early winter pastures green manuring and a limited acreage for the straw, it should be grown more largely for the grain which is now in great demand. It had not been considered a profitable crop because of a small yield of about 1000 pounds per acre. But since the **Rosen Rye** has come into prominence the yield has increased 2000 pounds per acre which together with the straw, nets a good profit to the grower.

Rosen Rye The **Rosen Rye** was brought from Russia in 1909 by Mr. Rosen, a student from Russia, attending the Michigan Agricultural College. This rye has been carefully kept 99% pure. Each head fills four complete rows of grain. The grains are much larger than of common rye and the yield per acre is 35 to 40 bushels while 15 bushels per acre is all that may be expected of common rye.

Spletz (Emmer Wheat)

Sow 80 to 100 lbs. per acre

A grain for dry lands, introduced from Russia. This is a remarkable grain, and should receive the attention of all farmers. It is a species of drought-resisting wheat, and not inclined to rust. It will produce a fair crop under almost any condition of climate, but grows best in dry prairie regions with hot summers, giving excellent results. Thrives on poor land or stony ground. The Experimental Stations of both the Dakotas report that it resists drought better than oats or barley. All animals eat it greedily, and are fond of the straw. No matter how dry the season, speltz is sure to head. You will have grain even if you have but little straw. Sow 80 to 100 pounds per acre very early, same as barley or oats. Price—Write for quantity price.

Common Buckwheat It is now demonstrated that buckwheat is one of the best cover crops to grow during the summer months. The soil is always moist where shaded with buckwheat. Sow the seed any time after April 1st, about 45 pounds per acre. Within ten weeks it will have matured seed; plow under; the seed will within ten weeks mature another crop. Thus with one sowing of seed you can plow under four crops. It will not survive the winter. Therefore it is necessary to sow once a year. We advise irrigation about time of maturity, and plow under as soon after irrigating as the soil will permit.

We highly recommend the growing of Buckwheat for reclaiming desert land, as it will start a growth and produce a crop under more adverse conditions than any other crop we know of.

Sow 40 lbs. per Acre.

1 lb. 25c postpaid. Quantity price on application.

Silver Hull Blooms longer and matures earlier than other varieties; grain of a beautiful light gray color with very thin hull.

Price—Per lb. 25c postpaid.

JUNE DROP PREVENTED BY BUCKWHEAT

W. B. Smith, Porterville, state that 80 acres of lemons with no cover crop produced 1250 boxes. 27 acres planted to Buckwheat produced 1600 boxes. The same 27 acres the year previous with no cover crop produces only 200 boxes.

Mr. Smith is a firm believer that buckwheat prevents June drop.

Tall Evergreen Broom Corn This Broom Corn grows about eight to ten feet high, stands up well and is entirely free from crooked brush. The fibre is long and fine. Its great value is that it will not get red in the field before it is cut, but it is strictly a green variety of brush, commanding high price. It grows to perfection in all sections of Central and Southern California, back from the coast.

(Per lb. 30c postpaid) (10 lbs. \$1.00 f. o. b. here). Write for quantity price.

Dwarf Evergreen Broom Corn is more desirable than the Tall in a locality where a strong wind prevails. It is also less trouble to harvest, while the yield is nearly the same as the Tall variety. Price—(Per lb. 30c postpaid) (10 lbs. \$1.00 f. o. b. here). Write for quantity price.

DWARF ESSEX RAPE

Pasture for Hogs, Sheep and Poultry

There is a need and a place for an extra quick growing green forage crop for use any time during fall, winter and spring and our Dwarf Essex Rape fills that need exactly.

Rape can never become a pest as it belongs to the same general family as the turnip and rutabaga and when planted under favorable conditions of soil and season, it makes an immense crop of green forage, juicy and succulent, and often at a time of year when little green feed is available.

35 cents per pound, postpaid. In quantity by express or freight, not prepaid, 20 cents per pound.

Grass Seeds for Lawns



Every Lawn on the Block Shows A & M Lawn Mixture

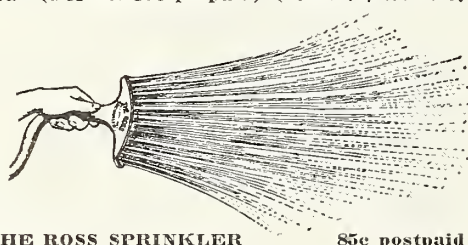
A & M Perfect Lawn Mixture According to the new discovery concerning inter-cropping with Legumes, explained on page 13, we have made a perfect mixture of the purest Kentucky Blue Grass and Dutch White Clover. This has been found to make the firmest sod and prettiest green lawn. It does so because the clover is a nitrogen gathering legume and this nitrogen fertilizes the Blue Grass.

When you make a lawn be sure to sow A & M Lawn Mixture, 1 lb. to 250 square feet of surface. Per lb. 75c post.

Fancy Kentucky Blue Grass The purest and best lawn seed. Produces a lasting and beautiful effect. We sell only the finest quality of this seed. (Per lb. 70c prepaid) (10 lbs. \$5.50 f. o. b. here).

White Dutch Clover Makes a showy effect much quicker than the Blue Grass. In conjunction with the Blue Grass, however, it forms the finest and closest turf (Per lb. \$1.05 prepaid) (10 lbs. \$9.00 f. o. b. here).

Australian Rye Grass Is very strong and quick-growing, producing an immediate effect. Later it becomes bunchy, and after a few years runs out. (Per lb. 35c prepaid) (10 lbs. \$1.75 f. o. b. here).



THE ROSS SPRINKLER

85c postpaid.

HOW TO MAKE A BEAUTIFUL LAWN

The beautiful lawns of Southern California cannot be excelled anywhere in the world. In few places can a new home become so quickly surrounded with luxuriant vines, trees, shrubbery and flowers. This climate will accomplish more in one season than five seasons of Eastern climate. It is a pleasure to plant here, for there is something blooming all the year round. But it requires skill and intelligent aid to direct nature to produce a profusion of beautiful colors at all times.

To keep up the beauty of a lawn it will be necessary to feed the grass well. You cannot expect it to retain that depth and richness of texture and color which characterizes it while young, after the elements of plant food have been exhausted.

See Bradley fertilizer, page —

In Southern California lawns may be made all the year. The first thing to do in making a lawn is to put the soil into proper condition to receive the seed. More lawn failures are due to insufficient preparation of the soil than to all other causes combined. If the soil is poor and of a sandy, clayey, or adobe nature, and a good rich loam is not available, satisfactory results may be obtained by spading in a liberal quantity of stable manure. Lawn grasses are voracious feeders and for that reason it is desirable to have at least eight to ten inches of good rich soil. Stable manure is most commonly used, especially for sandy soils, as chemical fertilizers usually leach too rapidly.



A Lippia Terrace
Plant Lippia on Your Terrace

Lippia Canescens This is a low-growing, trailing plant, producing grayish-green leaves, and quantities of small lilac-colored flowers. While it will respond to a light application of water, it will thrive and produce a good effect with little or no watering. Unlike Bermuda grass, it will never become a nuisance, and can easily be eradicated at any time. It stands sun and shade, and is well suited for planting in parkings along streets and avenues, and on terraces.

It is propagated by planting slips. Prepare the ground as for any other lawn or if a terrace prepare a suitable surface at the top for planting. Soak the ground until it is quite muddy; then with a pressure of the thumb bear into the mud one end of a slip six or eight inches long eight or ten inches apart each way. Sprinkle not too freely each day to keep a fresh green appearance.

We will send by mail postpaid enough cutting to plant 200 square feet of surface for one dollar (\$1.00). This will multiply rapidly in a very short time.

JUST THE THING FOR THE DESERT

From Mrs. I. C. Johnson, Las Vegas, Nev.: "We are delighted with the Lippia Grass for the cemetery. We think it is the only thing for the desert. The grass was received in lovely condition. Thank you for your advice."

Read carefully every page of this catalog. You may miss something important.

Sow about one pound of seed to two hundred square feet of lawn area. This heavy sowing is better than a thin sowing because many weed plants are crowded out by a good thick stand of lawn grass. The seed is sown evenly when the wind is not blowing and lightly raked into the surface.

In many sections of California, mulching the lawn after sowing the seed is a very desirable and oftentimes a necessary practice. The material used for such mulching should be quite fine and light in weight. Old, well-rotted sheep manure is generally used and applied lightly over the surface. After the mulch is applied a thorough watering may be given, and the soil kept moist by daily watering until the seed germinates. As soon as the grass is tall enough to be clipped, the lawn mower should be used. This early clipping tends to check the top growth of the young grass plants, and encourages them to make roots, thus producing a firm sod. After the first clipping a good rolling will tend to smooth the surface and promote better growth. Lawns should be watered thoroughly about two or three times a week during dry weather, preferably in the evening.

Lawns should not be clipped too short during the hottest and driest months of the year. The knives of the machine should be set high and the short, fine clippings thus produced may be allowed to remain on the lawn when they will quickly work down around the grass plants, and produce a mulch that conserves moisture and protects the crown of the plants from extreme heat.

BULBS FOR EVERY SEASON OF THE YEAR

Single Hyacinths

Name	Color	Size	Each	Doz.
*L'Innocence	Pure White	No. 1	.25	\$2.50
L'Innocence	Pure White	No. 2	.20	2.00
Grande Blanche	Blush White	No. 1	.25	2.50
Grande Blanche	Blush White	No. 2	.20	2.00
*Gigantea	Large Pink	No. 1	.25	2.50
Gigantea	Large Pink	No. 2	.20	2.00
Gertrude	Deep Rose	No. 1	.25	2.50
Gertrude	Deep Rose	No. 2	.20	2.00
Moreno	Lively Pink	No. 2	.20	2.00
*General Pelissier	Crimson Scarlet	No. 1	.25	2.50
General Pelissier	Crimson Scarlet	No. 2	.20	2.00
King of Belgium	Fine Scarlet	No. 1	.25	2.50
King of Belgium	Fine Scarlet	No. 2	.20	2.00
Robert Steiger	Rose Crimson	No. 1	.25	2.50
Robert Steiger	Rose Crimson	No. 2	.20	2.00
Queen Wilhelmina	Vivid Rose	No. 2	.20	2.00
Grand Lilas	Light Blue	No. 2	.20	2.00
La Charmante	Bright Blue	No. 2	.20	2.00
*King of Blues	Deep Glossy Blue	No. 2	.20	2.00
Grand Maitre	Porcelain Blue	No. 1	.25	2.50
Grand Maitre	Porcelain Blue	No. 2	.20	2.00

Double Hyacinths

Name	Color	Size	Each	Doz.
La Tour D'Auvergne	Earliest White	No. 1	.25	2.50
President Roosevelt	Bright Pink	No. 1	.25	2.50
Grootvorst	Large Blush Rose	No. 2	.20	2.00
General Antink	Bright Blue	No. 2	.20	2.00

Dutch Roman Hyacinths

Suitable for growing in groups, in the open or for forcing in pots or boxes

Name	Color	Each	Dozen	Per 100
Single Pink Dutch Roman .....		.08	.75	5.00
Single Pure White Roman .....		.08	.75	5.00
Single Light Blue Roman .....		.08	.75	5.00

Tuberose

Name	Color	Each	Doz.
Mexican White Pearl	Sweet Scented	.05	.50
Mexican White Pearl	Large Clumps	.20	2.00

Amaryllis

Can be grown in water

Name	Color	Each	Doz.
Formosissima	Bright Red	.15	1.50
Bella Donna	Bright Pink	.15	1.50

Watsonias

Resemble Large Gladioli

Name	Color	Each	Doz.
Large Pink .....		.35	.50
Large White .....		.05	.50

Gladiolus

Spring and Summer Flowering

Name	Color	Each	Doz.	100.
America	Light Pink	.05	.50	3.50
Elaine	Salmon Pink	.05	.50	3.50
Pink Perfection	Fine Pink	.05	.50	3.50
Mrs. Francis King	Light Red—Large	.05	.50	3.50
Peace	Pure White	.05	.50	3.50
Excelsior	New Pure White	.10	.75	5.00
Niagara	Cream Yellow	.10	.75	5.00
Principine	Crimson	.05	.50	3.50
Baron J. Hulot	Violet Blue	.05	.50	3.50
Anna Wigman	Yellow and Red	.05	.50	3.50
Orion	Pink with Red			
	Throat	.05	.50	3.50

Single Early Bedding Tulips

Name	Color	Each	Doz.	100.
White Swan	Pure White	.06	.65	5.50
Yellow Prince	Yellow Sweet Scented	.06	.65	5.50
*Prince of Austria	Large Orange Vermillion	.06	.65	5.50
*Kelzerkroon	Red with Yellow edge	.07	.75	6.00
*Couleur Cardinal	Bronze and Crimson	.10	1.00	8.00
Cramoise Brilliant	Brilliant Red	.07	.75	6.00
White Pottebakker	Early Large White	.07	.75	6.00
*Thomas Moore	Sweet Scented Orange	.06	.65	5.50
*Prosperine	Early Carmine Pink	.10	1.00	8.00
	Cherry Red and			
*Joost Van Vondel	White	.06	.65	5.50
Cottage Maid	White and Pink	.06	.65	5.50
*Vermilion Brilliant	Scarlet Vermillion	.08	.80	6.00

Double Early Bedding Tulips

Name	Color	Each	Doz.	100.
*Couronne d'or	Yellow and Orange	.08	.80	6.00
*Rubra Maxima	Deep Red	.07	.75	6.00
*Murillo	Fine Pink	.06	.65	5.50
May Flowering Tulip	White with Pink			
Picotee	Edge	.06	.65	5.50

Crocus

Name	Color	Each	Doz.	100.
Yellow Mammoth	Largest Yellow	.05	.40	3.00
King of Whites	Largest White	.05	.40	3.00
	White, Purple			
Sir Walter Scott	stripes	.05	.40	3.00
Baron Von Brunow	Light Purple	.05	.40	3.00

Freesia

Name	Color	Each	Doz.	100.
Giant Purity	White	.04	.40	3.00
Large Purity	White	.03	.25	2.50
Refracta Alba	Cream	.03	.25	2.50

Polyanthus Narcissus

Name	Color	Each	Doz.	100.
Paper White Grandiflora	White Clusters	.05	.50	4.00
Giant Paper White	White Clusters	.03	.70	5.00
Polyanthus Mixed	White and Yellow	.05	.50	4.00
Poeticus Ornatus	White Cup edged scarlet	.05	.50	4.00
Grand Soleil d'or	Gold and Orange	.06	.60	4.00

Daffodils

Name	Color	Each	Doz.	100.
Emperor	Large Golden Trumpet, Early	.08	.70	5.00
Empress	White with Yellow Trumpet	.03	.70	5.00
Trumpet Major	Deep Golden Yellow	.06	.50	3.75

Jonquils

Name	Color	Each	Doz.	100.
Campanelle Regulosus	Giant Yellow	.05	.50	4.00
Single, sweet scented .....		.05	.50	4.00

Chinese Sacred Lily

Introduced from China. Satiny white with golden yellow cup. They are borne profusely in clusters and are very fragrant. Fine for growing in water.
10c each. 3 for 25c.

Ranunculus

Double Turban Buttercup

Name	Color	Each	Doz.	100.
Double Turban	American Beauty	.04	.40	3.00
Double Turban	Yellow	.04	.40	3.00
Double Turban	Pink	.04	.40	3.00
Double Turban	White	.04	.40	3.00
Double Turban	Bright Red	.04	.40	3.00
Double Turban	Orange	.04	.40	3.00
Double Turban	White and Red	.04	.40	3.00
Double Turban	Mixed Colors	.04	.40	3.00

Spanish Iris

Name	Color	Each	Doz.	100.
Canary Yellow	Light Yellow	.04	.35	2.25
British Queen	Large White	.04	.35	2.25
Darling	Porcelain Blue	.04	.35	2.25
King of Blues	Solid Blue	.04	.35	2.25
Cajanus	Golden Yellow	.04	.35	2.25
Mixed Colors .....		.03	.30	2.00

Iris ("Fleur de Lis")

NEW FRENCH HYBRIDS

Name	Color	Each	Doz.	100.
Caterina	Light Blue and Lilac, huge blossoms on stems up to 4½ feet	1.00	10.00	
May Queen	Soft Rose	.25	2.00	
Freya	Pearl Violet	.25	2.00	
Agnes	White and Lilac	.25	2.00	
Delicatissima	White Frilled with Lilac	.25	2.00	
Innocenza	Purest White (Large)	.25	2.00	
Florentina	Silvery White/Orris Root	.25	2.00	
	Also Blue			
Stylosa	Lilac Blue) Earliest	.25	2.00	
	Also White) Bloomer	.25	2.00	
Mrs. H. Darwin	White and Violet	.25	2.00	
Name	Color	Each	Doz.	100.
Light Blue .....		.05	.50	4.00
Dark Blue .....		.05	.50	4.00
White .....		.05	.50	4.00

Giant Oxalis

For hanging baskets or winter border flowers.

Name	Color	Each	Doz.	100.
Oxalis	Pink	.03	.30	2.00
Oxalis	Lavender	.03	.30	2.00
Oxalis	White	.03	.30	2.00
Oxalis	Buttercup Yellow	.04	.40	3.00
Oxalis	Bowie Red	.04	.40	3.00

Ixias

Like miniature Gladioli, Orange and Red.. .03 .30 2.00

CALIFORNIA, THE LAND OF FLOWERS



Just a Prairie of California Wild Flowers

If you have a piece of ground you cannot irrigate or have not time to give particular attention, yet you want to have something beautiful instead of unsightly weeds, we advise you to plant our California Wild Flower Mixture, and you will have a plot of wild flowers like the picture above. One pound of seed is sufficient to plant an acre. (Pkt. 5c) (oz. 50c) (¼ lb. \$1.50) (½ lb. \$2.50) (lb. \$5.00) postpaid.

There are no more satisfactory flowers than those grown from seed, especially the easily grown and brilliant flowered annuals. The beautiful shrubs and lilies, of course, have their place, but are far more expensive than a paper of seed which will furnish a large number of plants with usually enough for one's garden and some to spare.

This page is intended to aid you in the selection of your seeds that you may have flowers all the year round, and for every purpose.

Tender or Greenhouse means the plant will not stand the least frost. All such must be planted late in spring (May) or in a greenhouse.

Half Hardy means the plant will stand any light frost, but needs protection against very cold weather. These should be planted in the spring (March and April), not in the fall.

Hardy means the plant will stand considerable frost, or practically all we have on the Pacific Coast. These may be planted in the fall or in the spring (October to May). If

sown in the fall they will come into bloom earlier than if sown in spring, even if the plants do not make much progress during the cold weather.

Annuals are plants that bloom the first year from seed, and the plant dies after one season. Tender annuals must be sown in spring (April to June) and hardy annuals may be sown in either spring or fall (October to May).

Biennials are plants that bloom the second year from seed, and the plant dies after blooming. In California many of these will bloom the first year if sown early. Sow under same conditions as perennials.

Perennials are plants that bloom the second year from seed, and the plant lives and blooms during successive years. If sown in early spring (February to April 15) many perennials will bloom the first year from seed. Tender and half-hardy perennials are best sown in spring after frost is over (April 15 to June). Hardy perennials are best sown in the late summer and early fall (July to October) for next year's flowers.

LIST OF FLOWER SEED FOR SPECIAL PURPOSE

PERENNIAL PLANTS

Antirrhinum, Aquilegia, Asters (hardy sorts), Bellis, Canna, Campanula, Carnations, Chrysanthemums (hardy sorts), Coreopsis, Delphinium, Dianthus, Digitalis, Gaillardia (hardy), Geranium, Gypsophila, Panicleata, Heliotrope, Hollyhocks, Lobelia (hardy sorts), Matricaria, Myosotis, Pansy, Phlox (hardy), Pinks (hardy), Poppy Iceland, Poppy Oriental, Primrose, Pyrethrum, Sweet William, Verbena, Violet, Wallflower.

PLANTS FOR BEDDING AND IN MASSES

Adonis, Agrostema, Amaranthus, Antirrhinum, Asters, Bachelor's Buttons, Balsam, Calceola, Calendula, Calliopsis, California Poppy, Campanula, Canna, Castor Beans, Carnation, Chrysanthemum, Clarkia, Cosmos, Coxcomb, Delphinium, Digitalis, Four o'clock, Gaillardia, Geranium, Heliotrope, Lantana, Larkspur, Linum, Mignonette, Nicotiana, Nigella, Phlox, Petunia, Pinks, Poppy, Salpiglossis, Salvia, Scabiosa, Sunflower (fancy), Stocks, Sweet Sultan, Sweet William, Verbena, Wallflower, Zinnia.

For Constant and Brilliant Bloom. African Daisy, Ageratum, Sweet Alyssum, Antirrhinum, Asters in all varieties, Calliopsis, all the dwarf Cannas, Centaurea, Eschscholtzia, Gaillardia, Scarlet Geraniums, Marigold, Nasturtium, Pansy, Petunia, Phlox Drummondii, Portulaca, Salvia, Scabiosa, Sweet Peas, Verbena, Double Zinnia.

Low-Growing Plants for Masses of Color. White—Sweet Alyssum, White Ageratum, White Candytuft, White Phlox, Drummondii, White Verbena.

Yellow—Gaillardia, Eschscholtzia, French Marigold and Nasturtium Lady Bird.

Blue—Ageratum, Heliotrope, Lobelia, Blue Verbena.

Red—Carmine and Crimson Candytuft, Geranium, Phlox Drummondii, Scarlet, and Phlox Dwarf Fireball, Poppy, Verbena.

Dwarf Plants for Edgings and Borders. Ageratum, Alyssum, Dwarf Candytuft, Centaurea, Coleus, Double Daisies, Golden Feather, Little Gem Feverfew, Heliotrope, Lobelia, Mignonette, Myosotis, Pansies, Phlox Drummondii, Pinks, Violets.

Fragrant Flowers. Sweet Alyssum, Candytuft, Carnation, Clematis Panicleata, Honeysuckle, Heliotrope, Lily of the Valley, Lily, Mignonette, Nicotiana Affinis, Pansy, Sweet Peas, Pink, Rose, Sweet William, Ten Weeks Stock, Tuberosa, Verbena, Wallflower.

Climbing Plants. Ampelopsis, Cypress Vine, Cinnamon Vine, Dolichos, the Gourd Family, Humulus Japonicus, Honeysuckle, Morning Glories and Ipomoea, English Ivy, Maurandia, Perennial Peas, Trumpet Vine, Canary Bird Vine, Alyssum, Begonia, Canna, Coleus, Dracaena Indivisa, Fuchsia, Grevillea, Geraniums, Heliotrope, German Ivy, Lobelia, Lantana, Mignonette, Mimulus, Maurandia, Nasturtium, Portulaca, Petunia, Schizanthus, Thunbergia, Myosotis (Forget-me-not).

For Cut Flowers. Antirrhinum, Aster, Carnation, Chrysanthemum, Coreopsis, Cosmos, Dahlia, Gladiolus, Gypsophila, Helianthus, Larkspur, Lupinus, Marigold, Mignonette, Phlox, Salpiglossis, Scabiosa, Stock, Sweet Pea, Sweet William, Sweet Sultan, Verbena, Wallflower, Zinnia.

For Shady Places. Anemone, Antirrhinum, Aquilegia, Begonia (tuberous), Double Daisy, Delphinium, Scarlet Flax, Foxglove, Oenothera, Pansy, Polyanthus, Violet.

PLANT GERANIUMS

Why is this beautiful flowering plant so much neglected? It requires little attention, little watering; it blooms all the year, in sun or in shade, nothing more beautiful for bedding or potting, for hedge or border, for arbor or window boxes. No other plant affords greater variety of flowers, both in type, color and variation of foliage. No other plant is so easily propagated. No other plant grows anywhere in all conditions of soil and climate so luxuriantly as the geranium. Every home in the city or country, and every desert home, may be surrounded, even buried in the dense cool foliage of the beautiful flowering geranium. Slips will bloom within a month after transplanting.

In order that the planting of geraniums may be encouraged, we are offering slips of various types of geraniums that shall be known by number, as we can not name all of the varieties we have to offer. Each number is described, that you may order the one best suited to your purpose. Some varieties are very scarce, but we make no variation in price, but if we haven't what you order

No.	Color	Height	Suitable for
1.	Salmon single	2 feet	Bedding or border
2.	Magenta double	3 feet	Bedding or border
3.	Scarlet double	3 feet	Bedding or border
4.	Pink	Dwarf Ivy	Sidewalk or window box
5.	Pure White double	12 inches	Bedding or border
6.	Apple Blossom double	12 inches	Bedding or border
7.	Light center to rose edge single	18 inches	Bedding, border or hedge
8.	Bright Red double	10 feet	Hedge, arbor, or to cover fences
9.	Pink	Climbing Ivy	Sidewalk, fences, around palms
10.	Light Pink single	3 feet	Hedge
11.	Sweet scented		

One slip each of the above assortment, 11 in all, 50c.

we will substitute another variety that is of similar description. Send no order amounting to less than 25c.

Price—(5 slips 25c) (11 slips 50c) (25 slips 75c) (100 slips \$2.50) postpaid.

FLOWER SEED LIST

SEE INSIDE BACK COVER



Ostrich Feather Asters

BRONIA (Sand Verbena).—A hardy annual, trailing in habit, about nine inches high, bearing verbena-like clusters of flowers, which are very fragrant. A native of California. Thrives in dry situations, and is valuable for rock-work or hanging baskets. **Umbellata.**—Rosy lilac. **Pkt. 10c.**

GERATUM (Floss Flower).—A hardy annual of easy culture, especially valuable for bedding, as it is literally covered with blossoms all summer. Sow the seed early in the spring, either in boxes to transplant, or out of doors, and thin to four to six inches.

Blue Perfection.—Deep blue, one foot high. **Pkt. 5c.**

Imperial Dwarf White.—One foot high. **Pkt. 5c.**

LYSSUM (Martimum).—A fragrant hardy annual, having the odor of honey, and bearing spikes of small white flowers in great profusion throughout the summer and autumn. Useful for borders or early bedding flowers. Sow the seed early in spring.

Sweet Alyssum.—One foot high, very sweet honey fragrance. (**Pkt. 5c**) (oz. 25c).

Little Gem.—Three to four inches high; fine for borders. **Pkt. 5c.**

Lilac Queen (New).—A new and distinct variety of a beautiful lilac shade, Dwarf, compact and very fragrant. **Pkt. 10c.**

MARANTHUS.—Hardy annuals, grown especially for their brilliant foliage.

Caudatus (Love Lies Bleeding).—Light yellowish-green foliage; long, drooping crimson flower spikes. Plants grow three to four feet high. **Pkt. 10c.**

Salicifolius or Willow Leaved.—This variety never fails to attract attention. The long variegated foliage makes it very useful for tall bedding or as a background. Height 3 ft. **Pkt. 10c.**

NGEL'S TRUMPET.—See Datura.

NTIRRHINUM (Snapdragon).—Antirrhinum thrive in almost any soil, and should receive more attention. It is undoubtedly one of the best cut flowers which can readily be grown from seed, while for bedding or borders they are unsurpassed.

Nanum, Black Prince.—Semi-Dwarf variety. Extremely rich color, which makes a splendid contrast with the lighter varieties. **Pkt. 10c.**

Majus or Tall Large Flowering Varieties. Height 3 feet.

Majus, Delila.—A striking contrast of carmine and yellow with a white throat. Very choice. **Pkt. 10c.**

Majus, Queen Victoria.—Striking variety sending up numerous long spikes of pure white flowers. Excellent for cutting. **Pkt. 10c.**

Majus, Golden King.—Long spikes of showy yellow flowers which remain in bloom the whole of the summer. **Pkt. 10c.**

Bright Pink.—A delightful shade of pure rose pink. Very vigorous and free-flowering. **Pkt. 10c.**

Majus, Grandiflora.—Tall. Mixed; including all the new colors. **Pkt. 10c.**

Majus, Stratum or Striped.—**Pkt. 5c.**

Majus Nanum.—Mixed.—**Pkt. 5c.**

Majus, Tom Thumb.—An excellent mixture containing all shades of these showy flowers. Splendid for edging and showy display. Height 10 inches.

Mixed.—**Pkt. 10c.**

AQUILEGIA.—A hardy perennial, growing about two feet high and bearing an immense variety of colors on long, smooth stems.

California Hybrids.—Large yellow flowers, orange spurs; an improvement on our native sort. **Pkt. 10c.**

Coerulea (Rocky Mountain Blue Columbine).—Fine deep blue and white; long spurs. **Pkt. 10c.**

White, Spurred.—Pure white with long spurs. **Pkt. 10c.**

Single Mixed (A. Vulgaris).—**Pkt. 10c.**

Long Spurred Hybrids Mixed.—For cut flowers these long spurred hybrids are unexcelled. Profuse blooms, of almost every shade, borne on long graceful stems, make this variety one of universal admiration. **Pkt. 15c.**

ARCTOTIC (African Daisy).

Grandis.—Large pearly white Marguerite-like flower, with delicate mauve center surrounded by a narrow golden band. The whole plant is covered with white down. Half hardy annual. Height 2 feet. **Pkt. 5c.**



Aquilegia Long Spurred Hybrid

ASPARAGUS

Plumosus.—A tender perennial for green-house or potted plant use, with long, fine feathery foliage. The sprays when cut, retain their freshness in water from three to four weeks. Seeds start slowly and should be soaked in water before sowing. (**Pkt. 10c**) (100 seeds 50c).

Sprengeri (Emerald Feather).—An early, easily grown, feathery-leaved variety, with drooping branches. The best variety for hanging baskets. (**Pkt. 10c**) (100 seeds 50c).

ASTERS.—A popular half-hardy annual produced in a great variety of classes and an almost endless number of colors. The tallest grow about two feet high, and some varieties of dwarfs are not over eight inches high. The best method of culture is to sow the seed in boxes and transplant when large enough to handle. The seed can be sown, however, in the row where the plants are to remain, thinning them from six to twelve inches apart, according to variety. We offer the three most useful varieties.

American Beauty.—A wonderful new free branching Aster with very long stems. Grows nearly three feet tall with very double flowers. We offer these in the American Beauty rose and purple shades. **Pkt. 15c.**

Queen of the market.—One of the earliest blooming varieties, blossoming frequently in July. Of spreading habit, 8 to 10 inches high. Blossoms medium sized, and the petals curve outward. The best variety for bedding or edging.

Mixed. All Colors.—**Pkt. 10c.**

Ostrich Feathered.—Extremely graceful Aster, with large, loose feathery heads, unrivalled for table decoration, flowers double and semi-double. The branching habit makes this a conspicuous border plant. Height, 18 inches.

White

Shell Pink

Rose

Crimson

Light Blue

Dark Blue

All colors, mixed. **Pkt. 10c.**



Giant Branching Asters

Giant Branching.—The tallest and best florist's variety, and we heartily recommend it as the very best type of Aster we have. The plant grows 24 inches high and about 18 inches in width, and the blossoms, which are large and full-petaled, are borne on long stems or branches. The most satisfactory type of all Asters, since it is not only a showy bedding flower, but owing to its long stems and large blossoms, is valuable for bouquets. Comes into flower late in the autumn. Best colors:

Lavender	Rose	Crimson
Pink	White	Purple
	Mixed	

Pkt. 10c.

AUSTRALIAN PEA VINE (Dolichos Lig-nosus).—A rapid growing evergreen climbing perennial, flowering freely in large clusters of rose flowers. For covering arbors, trellises, etc., they have no superior. Pink (**Pkt. 5c**) (oz. 25c).

BARTONIA AUREA.—A showy annual bearing large golden yellow flowers which glisten in the sunshine. Height 18 inches. **Pkt. 10c.**

BALSAM OR TOUCH-ME-NOT.—A tender annual, with brittle stems and foliage. Flowers both single and double, in bright colors and variations are wax-like and very attractive. The individual blossoms floating in a dish of water exhibit their beauty to the best advantage.

Improved Double Camelia Flowered.—In its extraordinary size, perfect form and brilliant colors, this fine strain of balsams surpasses all others. Height, 18 inches. **Pkt. 10c.**

Rose Flowered.—Handsome double flowers in form resembling a rose. Height 18 inches, fine mixed. **Pkt. 10c.**

Spotted.—Large semi-double flowers well adapted for borders, fine mixed colors. **Pkt. 10c.**

BACHELOR'S BUTTON.—See Centaurea.

BALLOON VINE, OR LOVE-IN-A-PUFF.—Climbing annual, with small inferior flowers. The seed pods are curiously swelled or puffed, and are quite attractive. (**Pkt. 5c**) (oz. 25c).

BELLIS PERENNIS (Double Daisy).—A hardy perennial, blossoming freely all spring and summer. Plant is about four inches high and is valuable for borders. Is much sown in lawns.

Extra Double White, or Snowball.—A clear white variety. **Pkt. 15c.**

Extra Double Pink or Longfellow.—A beautiful shade of pink. **Pkt. 15c.**

Double Mixed.—**Pkt. 10c.**

BIGNONIA (Trumpet Vine).—Magnificent hardy perennial climber, with brilliant scarlet or yellow flowers; a most ornamental and effective covering for walls, houses, etc. 30 feet. **Pkt. 5c.**

BORDER PINKS.—See Dianthus Plumar-us.

BRACHYCOMBE IBERDIFOLIA (Swan River Daisy).—A charming annual deserving greater popularity. The plants, which grow about 10 inches high, are covered with small Cineraria-like blooms in shades of blue and lavender.

Mixed.—**Pkt. 10c.**

CALENDULA (Pot Marigold).—Very hardy annual, one foot high, blooming freely practically the whole year round. Is of the easiest culture and is desirable for rather inferior soils, where less sturdy flowers do not thrive. A medicinal extract resembling arnica is made from the flowers.

Orange King (New).—This variety is now being grown indoors in Eastern States as a winter flower. Bears giant flowers sometimes 3 inches in diameter. Color pure orange. (**Pkt. 5c**) (oz. 25c).

Lemon Queen.—Like the above but of pure lemon. (**Pkt. 5c**) (oz. 25c).

Double Mixed.—A good mixture of 8 or 10 different shades of yellow, some clear colors and some shaded and striped (**Pkt. 5c**) (oz. 15c).



Ostrich Feathered Aster



Candytuft

CANDYTUFT (Iberis).—A hardy annual, growing about 6 to 18 inches high, according to the variety. The blossoms are borne on variously long spikes, and the newer varieties are quite large-flowering and very fragrant. Of easy culture and valuable for bedding or massing.

New Giant White Hyacinth Flowered.—A giant Candytuft, bearing immense snowy white spikes the blooms of which often measure 10 inches or more. Don't fail to give this a trial. **Pkt. 10c.**

Coronara Empress.—Large trusses of pure white flowers, the finest candytuft yet raised. **Pkt. 10c.**

We are offering some new novelties in Flowers this year.



Calliopsis Tiger Star

CALLIOPSIS.—These will grow luxuriantly in any situation and are most useful, affording a constant supply of richly marked flowers for cutting. All varieties are annuals.

Drummond.—Large, rich, golden yellow flowers with chestnut-brown centers produced in abundance. Height 18 inches. Pkt. 5c.

Tintoria.—Showy, yellow and brown flowers, height 2½ to 3 feet. Pkt. 5c.

Radiata Tiger Star.—A rich and continuously blooming annual with pretty, peculiar flowers. The petals of each flower are twisted like those of the well known Cactus Dahlia. Toward the center they show a vivid reddish brown coloration, the outer part being brilliant golden yellow tinged. The plants reach a height of about 8 inches and form round compact bushes which are throughout the summer literally covered with pretty flowers. Pkt. 10c.

Tall Mixed.—Very showy. Height 2 to 3 ft. Pkt. 5c.

CALIFORNIA POPPY.—See Eschscholtzia.

CANARY BIRD FLOWER (Tropaeolum Canariense).—A tender, climbing annual of the nasturtium family. Blossoms have curiously winged petals and are light yellow. Pkt. 5c.

CANNA.—See Bulbs.

CANNA.—Mixture of the popular varieties, red and yellow flowers. Plants have large ornamental leaves.

Crozy's Varieties.—Mixed. New large-flowered and free-blooming sorts. Pkt. 10c.

CANTERBURY BELLS (Campanula Medium.)—A hardy perennial, blooming the second year from seed, or the first if sown early. Grows about three feet high.

Calycanthemum.—A variety of Canterbury Bells having large semi-double flowers each resembling a cup and saucer.

Mixed.—Pkt. 10c.

Single Blue **Single Pink**
Single White **Single Mixed**
Pkt. 10c. **Double Mixed.**—Pkt. 10c.

CARDINAL CLIMBER.—A new climber of great merit, bearing a mass of small crimson flowers. Height 10 to 15 feet. Pkt. 15c.

CASTOR OIL BEAN.—See Ricinus.

CARNATION.—Our strain of these popular flowers is unsurpassable in beauty and variety of coloring, also in their delightful fragrance. For largest, richest flowers, we recommend their culture in pots of rich soil or small, shallow boxes. Cover the seed lightly, and shade from the strong rays of the sun. When the young plants are two or three inches high, they may be transplanted out into small beds. Shade and water them until established. Then they can be planted out in well-prepared beds, 12 to 18 inches apart. While the weather is cool, the grounds should be mulched about 2 inches deep with well-rotted manure. This will not only help to retain the moisture in the ground, but also supply nutriment to the plants. The seed may be sown any time between March and September.

Chaubaud Earliest French.—From the ease with which this fine carnation can be flowered as an annual it has attained a popular position, and will continue to hold a foremost place in the garden. The beautiful fringed double flowers make a brilliant display of attractive coloring in the open and are greatly prized in borders and for table decoration. Mixed colors. Pkt. 15c.

Grenadin Scarlet.—A valuable early-flowering variety coming quite true to color and producing an exceptionally large percentage of sweet scented double scarlet flowers of a most telling color. Pkt. 10c.

Marguerite Pure White.—An exquisite sweet scented fringed flower of pure white color. Invaluable for bedding or indoor decoration. Pkt. 10c.

Marguerite, Mixed Colors.—Very varied; gives a large percentage of fine double flowers. (Pkt. 10c) (¼ oz. 20c).



Carnation Chaubauds

CELOSIA.—Very ornamental and strong plants, producing magnificent spikes of feathery looking flowers. They succeed well in the garden and make very attractive pot plants.

Childii Woolflower.—A new annual of great merit. As the name suggests, the flower resembles huge balls of crimson wool. When cut, if it is hung head down, until dry, makes a beautiful everlasting flower. Height 15 inches. Pkt. 15c.

Thompsoni Magnifica.—A very fine selection of the popular feathered Celosia containing many pleasing shades of color varying from pale yellow to the deepest crimson. Pkt. 10c.

CELOSIA CRISTATA (Cockscomb).—This is too well known to need description. We offer it in the following:

Dwarf Empress.—A handsome strain, large and compact heads; color splendid crimson. Height 10 inches. Pkt. 15c.



Centaurea Imperialis

CENTAUREA IMPERIALIS (Royal Sweet Sultan).—This is the variety so popular in the florist's store. The plants are of spreading habit and one plant has been known to keep a home replenished with cut flowers during the entire summer. We offer it in the three distinct shades. Height 3 to 4 feet.

Imperialis Pure White.—Pkt. 5c.

Imperialis Lavender.—Pkt. 5c.

Imperialis Purple.—Pkt. 5c.

All Colors Mixed.—Pkt. 5c.

CENTAUREA CYANUS (Corn Flower or Bachelor's Button).—This old fashioned flower is still a great favorite for cutting purposes. We call special attention to our new Double Blue which is a great improvement on the single variety.

Double Blue.—The same pleasing shade of blue but of much more substance than the single kind. Height 2 to 3 feet. Pkt. 10c.

Single Blue.—The rich deep blue Bachelor's Button. Pkt. 5c.

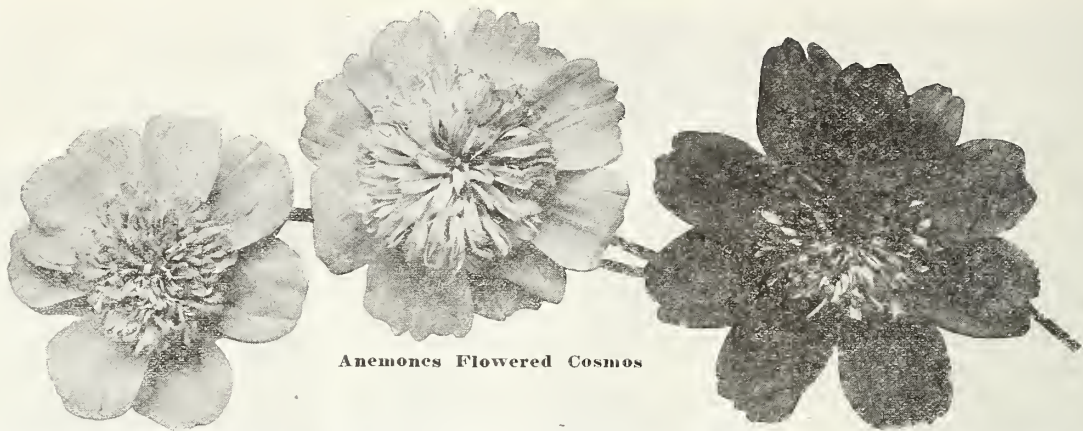
Single Mixed.—Contains various shades of pink, white and blue. Pkt. 5c.

CENTAUREA CANDIDISSIMA (True Dusty Miller).—Broad silvery white foliage; useful for edging. Height 12 inches. Pkt. 10c.

CINERARIA.—A tender perennial, grown principally in the greenhouse, but can be grown in the garden in summer. Seed should be sown in summer, and the greenhouse requires only moderate heat. Plants grow from 1 to 2 feet high and bear clusters of large, single flowers of bright colors. Will do well in a partly shaded location.

Cineraria Hybrida Grandiflora.—The mixture includes every conceivable shade of pink, carmine, crimson and blue, varying to violet, as well as pure white, and blue and white. The flowers are of immense size. Pkt. 35c.

Hybrida.—Choice mixed; splendid strain of compact growth, bearing large exquisitely colored flowers. Pkt. 25c.



Anemones Flowered Cosmos

CLARKIA.—A hardy annual of easy culture, growing about 18 inches high and bearing bright rose, white, or purple flowers in great profusion. Native of California. Seed sown in the fall will give early blossoms in the spring. Seed can be sown almost any time.

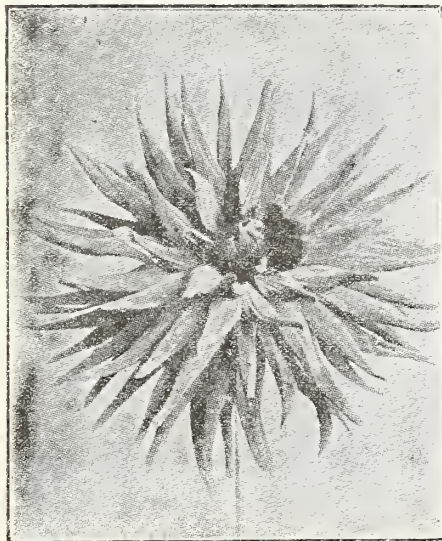
Elegans Double Mixed.—The long sprays of bloom resemble peach blossoms and are very showy when in full bloom. Height 3 ft. Pkt. 5c.

Pulchella, Single Mixed.—Much more dwarf than the preceding and usually planted for mass effect. Height 15 inches. Pkt. 5c.

CLEMATIS, Paniculata.—A very fine hardy climber; leaves bright and glossy green; flowers small and hawthorne scented, and just covering the plant when in bloom. Excellent for covering trellises, cemeteries or fences. Pkt. 10c.

COBEA SCANDENS (Cup and Saucer Vines).—A climber of rapid growth; very valuable for covering trellises, arbor, trunks of trees, etc. Will cling to any rough surface, often attaining a height of 30 to 40 feet in one season.

Scandens Purpurea.—Large bell-shaped purple flowers. Pkt. 10c.



Dahlias, Cactus, Choice Mixed

COIX LACHRYMAE ("Job's Tears").—Curious ornamental grass with broad, corn-like leaves and seeds of a light slate color. Valuable for winter bouquets with everlasting flowers. Strings of handsome beads are made from the seeds. Hardy annual; three feet high. (Pkt. 5c) (oz. 30c).

COLEUS.—These beautiful and ornamental foliage plants, producing the most attractive colors, are a most interesting subject to grow from seed. To watch the foliage change into a variety of colors as it grows day by day, is wonderful. Pkt. 15c.

COSMOS.—A tender annual with fine-cut, feathery foliage and large, showy blossoms. Cosmos are now divided into two distinct classes, the early and late varieties. The early flowering will bloom in June and if cut back will bloom again in September. The late blooms in the fall or about November 1st. Plant out in the open where the flowers are intended to bloom.

Crested or Anemone Flowered Cosmos.—This variety has a decidedly double center with outer guard petal as shown in the above cut. This is made from an actual photograph of these flowers. Pkt. 15c.

New Gigantic Orchid Flowering Lady Lennox.—Size, 6 inches in diameter, with wide overlapping petals of an exquisite shade of shell pink. The flowers are on long stems, making them exceptionally desirable for cutting. Height 5 to 7 feet. Pkt. 10c.

Late Giant Crimson.—(Pkt. 5c) (oz. 25c).

Late Giant Pink.—(Pkt. 5c) (oz. 25c).

Late Giant White.—(Pkt. 5c) (oz. 25c).

Late Giant Mixed Colors.—(Pkt. 5c) (oz. 25c).

New Mammoth Early Flowering Mixed.—An improved early type which blooms 60 days after planting. The immense blooms often measure 6 inches in diameter and come in a mixture of white, pink and crimson. For florists or the private garden this variety is certainly the best. (Pkt. 10c) (oz. 50c).



Double Flowered Cosmos

DOUBLE COSMOS

We have secured a small amount of seed of these beautiful double Cosmos. This is one of the finest of recent novelties and most exquisite of all for cut flowers.

Double Crimson.—Pkt. 25c.

Double Pink.—Pkt. 25c.

Double White.—Pkt. 25c.

CONVOLVULUS OR MORNING GLORY.—Free flowering, beautiful climbers with rich and varied colored flowers, very useful for covering lattice work, verandas, etc., where they are exceedingly effective. Soak the seed for several hours in warm water before planting.

Major Tall Mixed.—Attains a height of 15 feet or more and comes in shades of Rose, Crimson, Blue and White. (Pkt. 5c) (oz. 15c).

Minor Dwarf Mixed.—A beautiful hardy bedding and border plant, attaining a height of about 1 foot. (Pkt. 5c) (oz. 15c).

Imperialis (Imperial Japanese Morning Glory).—The best Morning Glory for strong growth and varying colors. Height 15 to 20 ft. (Pkt. 10c) (oz. 15c).

CORNFLOWER—See Centaurea.

COREOPSIS—See Calliopsis.

COREOPSIS (Lanceolata Grandiflora).—A hardy perennial bearing a profuse and long-continued succession of large, bold, golden yellow flowers during the whole summer months. Seed sown in March will flower the same season. Height 2½ feet. Pkt. 5c.

CYCLAMEN.—A tender, bulbous perennial, used in greenhouses and window gardens. It is easily grown from seed. Sow in the fall or early spring.

Persicium Giganteum.—Flowers of extraordinary size. The leaves are proportionately large, marked with silver-grey. Extra choice mixed. Pkt. 25c.

CYPRESS VINE (Ipomea Quamoclit).—A tender climbing annual with soft fern-like foliage and small star-like flowers. Choice mixed colors. Pkt. 10c.

DAHLIA.—Although not generally known Dahlias are easily grown from seed. If planted early in a hot bed and transplanted when danger of frost is past they will bloom the first season and make large bulbs by the next fall.

Cactus, Choice Mixed.—Our mixture contains many of the recent novelties. Giants with pointed petals. Pkt. 10c.

Double.—Choice mixed colors in great variety and flowers of excellent form. Pkt. 10c.

Single Mixed.—Seed saved from the choicest varieties. Pkt. 5c.



Shasta Daisy

DAISY, SHASTA DAISY.—A fine perennial plant bearing large white single blossoms, with yellow centers. Soak seed in warm water over night before sowing. **Pkt. 10c.**

DAISY, DOUBLE—See Bellis.

DATURA (Trumpet Flower).—Tender annual, growing about 3 feet high, flowers large and trumpet shaped. Choice mixed colors. **Pkt. 5c.**

DELPHINEUM OR PERENNIAL LARK-SPUR.—Beautiful, hardy border perennials with noble spikes of handsome flowers; very useful for cut flowers, etc. Sow in the spring or early fall in seed beds or boxes and transplant when large enough.

Elatum Hybridum Mixed.—Large, handsome flower spikes, including the best of the new double and single varieties; height 3 feet. **Pkt. 5c.**

Formosum.—Rich blue flowers, exceedingly effective in borders; height 3 feet. **Pkt. 5c.**

Blue Butterfly.—A distinct variety which blooms from seed the first season. The large single spikes are of a rich Salvia Blue and make a splendid cut flower. Height 18 inches. **Pkt. 10c.**

DIANTHUS, OR PINKS.—Hardy annuals, about 1 foot high, and bearing beautifully colored single and double blossoms in profusion all summer. Sow seed early in boxes and transplant, or sow in rows where the plants are to remain, and thin.

CHINENSIS OR CHINESE PINK.—This comes in a large range of colors and is used largely for massing in beds. **Mixed.**—**Pkt. 10c.**

HEDDEWIGI OR JAPANESE PINKS.—A good variety for bedding or cutting. The single or double flowers are very showy. **Mixed.**—**Pkt. 5c.**

PLUMARIUS (Grass Pink).—Hardy perennial producing large fragrant double, semi-double and single flowers of varied colors. **Pkt. 5c.**

DUSTY MILLER.—See *Centaurea Candidissima*.

DIGITALIS, OR FOXGLOVE.—A hardy perennial, blooming the second year from seed. Grows usually about 3½ feet, although in very rich soil sometimes 6 feet. The bell shaped flowers are borne on long spikes, and come in shades of purple, lavender, rose and white, all spotted lightly inside the blossom. Thrives best in cool, shady locations. **Fine Mixed.**—**Pkt. 10c.**

DIMORPHOTHECA AURANTIACA.—The Golden Marguerite. A rare and extremely showy annual from South Africa which has become a great favorite on account of its easy culture and beautifully colored flowers. Its Marguerite-like blossoms, produced in great profusion, are 2½ to 2¾ inches in diameter. These are a unique glossy rich orange gold, which brilliant coloring is rendered more conspicuous by the dark disk surrounding the black zone. **Pkt. 10c.**

DOLICHOS, OR HYACINTH BEAN.—Tender, climbing annual. Grows rapidly and is valuable for covering a trellis. Flowers in purple or white; are borne on long stems, the individual blossoms resembling the bean flower, and the ornamental pods resemble bean pods. Sow seed in open ground late in April. **Lablab.**—**Mixed. (Pkt. 5c.) (oz. 15c.)**

EVERLASTING FLOWER.—See *Helichrysum*.

EVERLASTING PEAS.—See *Lathyrus Latifolius*.



California Poppy

ESCHSCHOLTZIA OR CALIFORNIA POPPY.—A hardy annual with fine-cut feathery foliage and beautiful velvety cup-shaped flowers. Grows from 1 to 1½ feet high and blooms profusely. Seed may be sown in the fall and any time thereafter till April, and blossoms may be had from early in January till late in summer. The beautiful State flower of California.

Californica.—The bright, orange-yellow common variety. **(Pkt. 5c) (oz. 25c).**

Crocea.—Pure deep orange. **(Pkt. 5c) (oz. 25c).**

Crimson Improved.—A deep rich crimson. Very choice. **Pkt. 10c.**

Pure White.—**(Pkt. 5c) (oz. 25c).**

Mixture of All Varieties.—**(Pkt. 5c) (oz. 30c) (lb. \$3.00).**

BUSH ESCHSCHOLTZIA.—See *Hunnemannia*.

FLAX.—See *Linum*.

FLOWERING SAGE.—See *Salvia*.

FOXGLOVE.—See *Digitalis*.

FUCHSIA (Lady's Eardrop).—A well known plant of easy culture in pots for the conservatory, parlor decoration or the open ground. Start seed early under glass. **Double Mixed.**—**Pkt. 25c.**

FOUR O'CLOCK (Mirabilis).—A hardy annual of easy culture, growing about 2 feet high. The plant is free flowering, bearing blooms of a great variety. **Mixed.**—**Pkt. 5c.**

FORGET-ME-NOT (Myosotis).—A hardy perennial, growing 6 to 12 inches high. Small star-like flowers are borne in clusters on long stems; blooms the first year if seed is sown early. Thrives best in a cool, moist location.

Alpestris.—Blue. **Pkt. 10c.**

Victoria.—Large flowers; bright azure blue with yellow center; plant symmetrical, dwarf and strong grower. **Pkt. 10c.**

GAILLARDIA.—Beautiful show plant, remarkable for the profusion, size and brilliancy of its flowers continuing in bloom from early summer till late in the fall. Excellent for beds, borders, or for cutting. Should be sown where they are to bloom, height 18 inches.

Grandiflora.—Single perennial variety of varying shades of reddish brown and yellow. **Pkt. 5c.**

Pieta Lorenziana Double Mixed.—Large heads of bright yellow and red flowers. Very double, with quilled petals, suitable for bouquets. **Pkt. 5c.**

GODETIA.—A hardy annual, 15 inches high, of compact growth, satiny cup-shaped flowers in deep red, pink and white, shaded and blended. Valuable for bedding. Sow seed early in the year.

Semi-Dwarf Mixed.—Including all the finest varieties. **Pkt. 5c.**

GERANIUM.—A half-hardy perennial, flowering the first year from seed if sown early. A gorgeous flower of numerous shades of color; bearing continuously renders this one of the most popular plants grown.

Large Flowers of Fancy Show.—This choice mixture includes many of the newest and finest sorts. **Pkt. 25c.**

GERANIUM CUTTINGS.—See page 78.

GLOXINIA.—Beautiful hot-house plants, with large, bell-shaped blossoms, which come in rich, velvety-deep, and bright colors, some of which are beautifully marked. Sow in the fall or early spring.

Hybrida Grandiflora.—Enormous flowers. **Pkt. 25c.**

GOLDEN-GLOW.—See *Rudbeckia*.

Gypsophila (Baby's Breath).—A hardy annual of easy culture. Grows two or three feet high, and bears a profusion of small star-shaped white and pink flowers.

Paniculata.—Fine for bouquets; white flowers; perennial. **(Pkt. 10c) (oz. 60c).**

Elegans.—Annual white. Very largely grown by florists for use in bouquets. **(Pkt. 5c) (oz. 35c).**

Elegans Carmine.—A recent introduction of a deep carmine rose. **Pkt. 10c.**

HELIANTHUS.—See Sunflower.



Gaillardia Grandiflora



Helichrysum

EVERLASTING FLOWERS

Flowers of eternal beauty. Highly prized for winter decorations. Should be cut when partially expanded and hung head downward until thoroughly dry.

Acroclinium.—Double Mixed. Flowers, pure white and soft pink, with golden centers. Should be cut the first day they open. **Pkt. 5c.**

Ammobium Alatum.—Flowers pure white and very double. Great bloomer. **Pkt. 5c.**

Gompbrema.—Entirely different in appearance from any other everlasting flower and very attractive. Has a globe-shaped flower.

Pink.—Pkt. 5c.

Red.—Pkt. 5c.

Orange.—Pkt. 5c.

Helichrysum, Straw Flower.—A free-flowering, hardy annual, growing four or five feet high and bearing beautiful straw-like flowers in a great variety of shades and color. **Pkt. 5c.**

Statice, Sinuata.—An annual deserving far greater popularity. They make a charming winter bouquet when mixed with Helichrysum.

Blue.—Pkt. 5c.

Rosea.—Pkt. 5c.

White.—Pkt. 5c.

Mixed.—Pkt. 5c.

HELIOTROPE.—A half-hardy perennial growing four to eight feet high. Small flowers, borne in graceful clusters and very fragrant. Blooms the first season from seed if sown early. Forms a large plant and requires a roomy situation.

Finest Mixed.—A mixture of the ordinary true types in shades of white mauve and purple. **Pkt. 10c.**

HOLLYHOCK.—A hardy perennial of upright, stately growth, five to eight feet high, unequalled for a background or covering ugly places. Seed sown in seed beds or boxes in the spring. May be planted out when large enough and will bloom the following year. The following are saved from large double-flowering varieties:

Double White.

Double Yellow.

Double Pink.

Double Black.

Double Mixed.

Any of the above, **Pkt. 10c.**

Allegheny.—This unique and beautiful variety produces semi-double flowers about 3 inches across. The petals are crinkled and fringed like crumpled and slashed satin. **Pkt. 10c.**

New Annual Mixed.—A new departure in Hollyhocks. Seed sown in the Spring will bloom the first year. **Pkt. 5c.**

HUNNEMANNIA, OR BUSH ESCHSCH-OLTZIA.—Known also as the Santa Barbara Poppy. An erect-growing, tender perennial, about two feet high. Foliage fine-cut, feathery blossoms, beautifully cup-shaped, bright yellow, and about three to four inches across. Stems, long and smooth. Unlike the average Poppy Hunnemannia will keep for several days in water and makes a splendid cut flower. **Pkt. 5c.**

HYACINTH BEAN.—See Dolichos.

IPOMOEA (Moonflower).—An extensive genus, including many well known garden flowers. These are tender climbing annuals from 5 to 30 feet long. The seed of several varieties, especially the moon flower, should have the outer shell punctured and then soaked in water for twelve hours or more to germinate it.

Bona Nox (Evening Glory).—Rosy lilac flowers, expanding in the evening; of very rapid growth. **Pkt. 10c.**

Coccinea.—Brilliant scarlet flowers, with small foliage. **Pkt. 10c.**

Grandiflora Alba.—Large flowers of pure white. **Pkt. 10c.**

Learli.—Violet and blue flowers. **Pkt. 10c.**

IPOMOEA IMPERIALIS.—See Morning Glory.

IPOMOEA QUAMOCLIT HYBRIDA.—See Cardinal Climber.

JOB'S TEARS.—See Coix Lachryma.

KENILWORTH IVY.—Unsurpassed for hanging baskets. A rapid grower, with long graceful vines covered with small leaves and violet tinted white flowers. **Pkt. 10c.**

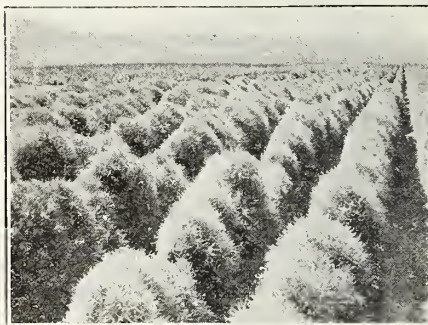


Ipomoea or Moonflower



Hollyhock

KUDZU VINE (Pueraria Thumbergiana). A new climber of great merit. This vine is one of the most rapid climbers there is, growing to 20 feet quickly. Called also Jack-and-the-Bean Stalk. Hardy perennial. **Pkt. 10c.**



Kochia Tricophylla

KOCHIA TRICOPHYLLA (Summer Cypress).—A splendid ornamental annual plant, forming dense oval bushes, 2 to 2½ feet high, of small, feathery, light green foliage. As summer advances this changes to a carmine hue and finally to a fiery red. A very attractive plant at all times. Also called "Burning Bush." **Pkt. 5c.**

LARKSPUR.—A useful annual for the border or for cut flowers. The double flowering varieties we offer are a great improvement on the old single kinds. Height 3 feet.

Double Stock Flowered Lustrous Carmine.—An entirely new shade. Color a bright rosy carmine. **Pkt. 10c.**

Double Stock Flowered, White.

Double Stock Flowered, Lilac.

Double Stock Flowered, Deep Blue.

Double Stock Flowered, Mixed.

Any of the above, **Pkt. 10c.**

LANTANA.—Tender perennial, growing from 2 to 3 feet high, bearing Verbena-like clusters of flowers, in orange, white, rose and other colors, excellent for bedding.

Choice Mixed.—Pkt. 5c.

LATHYRUS LATHIFOLIUS (Everlasting Pea).—A hardy, perennial climber of great beauty with elegant sweet pea-like flowers in great profusion; height 6 to 8 feet.

Red.—Pkt. 5c.

Fine Mixed.—Pkt. 5c.

LINUM, OR SCARLET FLAX.—A hardy annual, about one and one-half feet high. Of slender and graceful appearance, with smooth stems and bright red flowers, which are borne in great profusion. Can be sown early out of doors, and thrives well in good soil.

Rubrum.—Pkt. 5c.



Lobelia Crystal Palace

LOBELIA.—A hardy annual and perennial. The annual grows four to six inches high, is of compact growth, and literally covered with small bright flowers. By cutting back the plants during the summer and giving plenty of water they may be kept in flower all summer. Used for ribbon work and borders or hanging baskets.

Bernard's Perpetual.—Flowers brilliant ultramarine blue, with a pure white mark at the base of each of the two lower petals; height 6 inches. **Pkt. 10c.**

Crystal Palace.—Undoubtedly the finest dwarf blue Lobelia for bedding. Plants very compact, profusely covered with rich blue flowers. Height 4 inches. **Pkt. 10c.**

Royal Purple.—Dark, bronzy green foliage, flowers rich purple-velvet with clear white eyes. A splendid variety for ribbon borders, window boxes, etc. Height 6 inches. **Pkt. 10c.**

LOVE-IN-A-MIST.—See *Nigella*.

LUPINS (or Lupinus).—In spite of the fact that our Lupin is one of the most common of our native flowers, many people still grow it for its beauty. We offer the annual variety only which is the most easily grown.

Annual Mixed.—Height 2 ft. **Pkt. 5c.**

MARIGOLD.—A hardy annual, in dwarf and tall varieties, growing from 6 inches to 3 feet high. The flowers are various shades of yellow and brown. The tall varieties are very valuable for large bedding or background work, and the dwarf varieties for borders.

Dwarf French Legion of Honor.—The color is a dark velvety brown, gracefully surrounded by a distinct gold ring. The compact, bushy plant flowers abundantly and is more lasting than any other annual. **Pkt. 5c.**

MARIGOLD-FRENCH.—The flowers are much smaller than the African but are greatly prized for bedding.

Tall French Mixed.—In shades of yellow, brown and tricolors. Height 2 ft. **Pkt. 5c.**

Marigold Dwarf French Mixed.—Like the above but only 10 inches high. **Pkt. 5c.**

African Tall Double Orange.—Beautifully formed flowers of gigantic size and bright color; height 2½ feet. **Pkt. 5c.**

African Tall Double Lemon.—Like the above but of a pure citrus yellow. **Pkt. 5c.**

African Tall Double Mixed.—**Pkt. 5c.**

MARVEL OF PERU.—See Four O'Clock.

MIGNONETTE.—Hardy annual, growing 6 to 12 inches high and bearing pyramid-shaped spikes, exceedingly fragrant. Sow in the fall for early blossoms in the spring. Valuable for plotting, bedding or border.

Allen's Defiance.—Long spikes of whitish flowers and compact growth. **Pkt. 10c.**

Goliath.—Robust growing variety with enormous spikes of red colored flowers; height 15 inches. **Pkt. 10c.**

Maehet Mixed.—A dwarf compact variety, with large stubby spikes covered with copper-red flowers, etc. **Pkt. 5c.**
Sweet Scented (Reseda Odorata).—**Pkt. 5c (oz. 25c).**

MIMULUS.—A half hardy perennial, growing from 6 inches to 1 foot high. Blooms freely and exists in a large variety of colors. For gardens in a moist, shady situation. Blooms first year from seed if sown early.

Moschatus, or Muck Plant.—Fragrant plant with small yellow blossoms, spotted lightly with brown. **Pkt. 10c.**

Tigrinus, or Monkey Flower.—Large flowers of several colors, and spotted. **Pkt. 10c.**



Double Marigold—Tall African Orange

MOMORDICA (Balsam Apple).—A climbing annual, growing about 10 feet long. Has graceful and ornamental foliage, yellow flowers and warted golden yellow fruit, with large carmine-red seeds. Balsam Apple and Balsam Pear are climbers which thrive in hot locations, and are much planted around Bakersfield. **Pkt. 5c.**

Charantia, or Balsam Pear.—Same as the Balsam Apple, but fruit is pear-shaped. **Pkt. 5c.**

MOONFLOWER.—See *Ipomoea*.

MOURNING BRIDE.—See *Scabiosa*.

MYOSOTIS.—See *Forget-Me-Not*.

MORNING GLORY.—See *Convolvulus*.

NASTURTIUM.—These favorite flowers will grow in almost any location and on all kinds of soil. The Dwarf varieties are used for bedding and borders and the Talls for climbing and covering fences, trellises, etc. They continue to bloom until cut down by the frost.

Fine Dwarf Mixed.—Height 10 inches. **(Pkt. 5c) (oz. 15c).**

Tall Giant Mixed.—Height 5 to 10 feet. **(Pkt. 5c) (oz. 15c).**

NEMOPHILA.—A hardy annual about six inches high. Has small, cup-shaped blossoms about one inch in diameter, in white and shades of blue.

Insignis (Baby Blue Eyes).—Sky blue, with white eyes. **(Pkt. 5c) (oz. 25c).**

NICOTIANA, OR FLOWERING TOBACCO.—A half hardy annual, growing 3 feet high, with slender tubular flower. Belongs to the tobacco family. Requires plenty of room in the garden.

Affinis.—White, and very fragrant. **Pkt. 10c.**

Sanderaea.—A new, large, flowering type, with various bright-colored blossoms. **Pkt. 10c.**

NIGELLA (or Love-in-a-Mist).—A hardy annual, one foot high, with finely cut foliage. Oddly shaped blossoms in blue and white, and curious seed pods. Of easy culture.

Miss Jekyll.—Long stemmed flowers which are of a clear corn-flower blue; elegant foliage, height 18 inches. **Pkt. 5c.**

PASSION FLOWER.—A hardy perennial climber, very satisfactory for immense growth, as it will cover a porch or small cottage in one season.

Coerulea Grandiflora.—Sky-blue. **Pkt. 10c.**

PENTSTEMON

Hartwegi Hybrida Mixed.—The large Gloxinia shaped blooms vary from pure white, pink, rose and crimson to mauve and purple, including many which are beautifully edged. Hardy perennials. Height 2 feet. **Pkt. 10c.**

PETUNIA.—A splendid race of plants, rich and varied colors, and profuse flowering with their charming and tender looking flowers, they are very beautiful for groups in the open. For pot culture also, Petunias are almost unsurpassed. Sow seed early in spring, scatter thinly on an even surface and barely cover the seed with sand. If intended for the open ground plant out into a frame to be kept till planting-out time. If for pots, pot singly into small pots in strong rich soil mixed with sand and shift as the plants grow larger.

Grandiflora Single Mixed.—Exceedingly handsome and free flowering, containing the greatest variety of colors, yellow throated, veined and blotched. Very large flowers. **Pkt. 15c.**

Hybrida Fine Mixed.—The best Petunia for massing in beds and borders, yielding a profusion of brilliantly marked flowers. **Pkt. 5c.**

Ruffled Giant Petunias.—A beautiful deep throated new strain with flowers that are ruffled, fluted and fringed. Solid intense colors. **Pkt. 25c.**

Superb Double Fringed Mixed.—One of the finest strains of Petunias in existence. The double flowers are very large, full and symmetrically formed, having the edges of the petals beautifully fringed. **Pkt. 35c.**

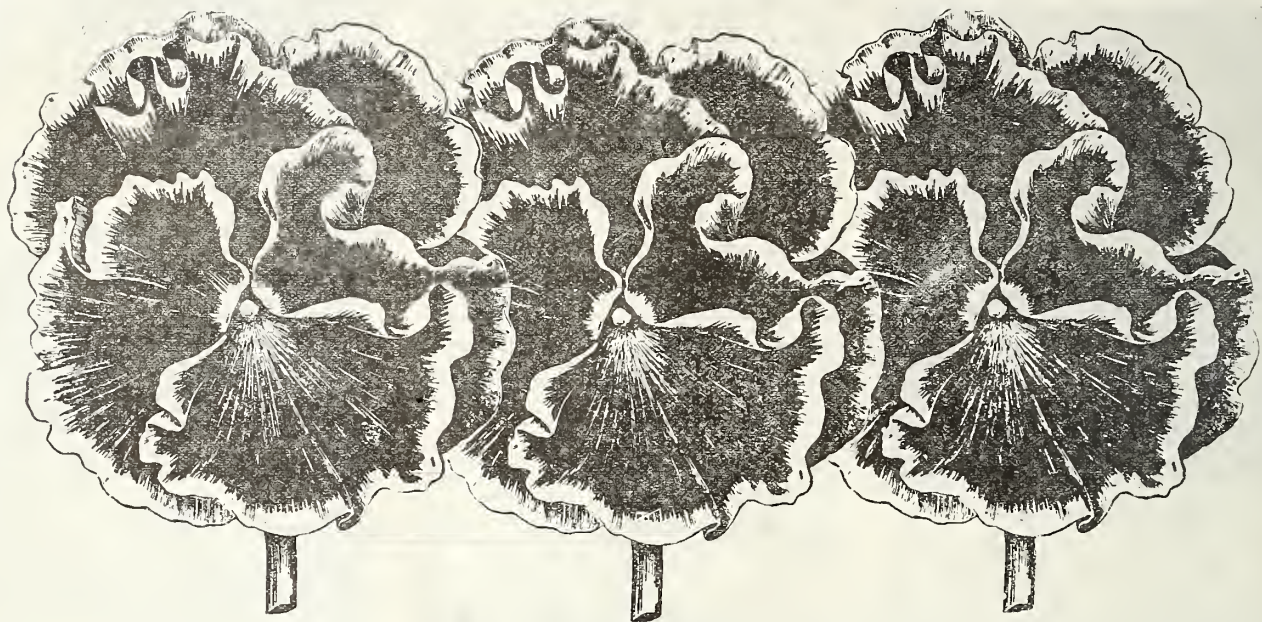
PHLOX DRUMMONDII, Grandiflora.—A hardy annual, growing from six inches to one foot high and bearing beautiful, soft-petaled and brilliantly colored flowers all spring and summer. Fine for bedding and massing. Sow seed in the open ground.

Drummondii Fireball.—Habit similar to the Snowball; color brilliant red; flowers profusely. This and Snowball are two of the most effective varieties of Phlox in existence. Height, 1 foot. **Pkt. 10c.**

Drummondii (Dwarf Snowball).—A dwarf, compact and very free blooming Phlox. Flowers large and pure white. An excellent companion to Fireball. Height 1 foot. **Pkt. 10c.**

Finest Mixed.—**Pkt. 10c.**

Perennial.—Indispensable for border plant. Seed saved from the finest bright colored flowers. Height, 2 feet. **Pkt. 10c.**



Steele's Mastodon Pansies

The magnificent giant pansies of the San Francisco Fair. Without a doubt, the most wonderful pansies of the day, with a robust vigor unknown in any other strain. These blossoms are almost four inches across and are of a most wonderful variety of colors and variegations. They bloom from two to four weeks earlier than any other variety of pansies. It is impossible to paint a word picture that will do justice to these flowers. You will never regret it, if you have them in your garden or porch box.

White Mastodon—Snow white with a dark center, very large and beautiful. Pkt. 25c.

Mastodon Mixed—A wonderful collection of rich velvety shades, in great variety, with fine long stems. Pkt. 25c.

Bronze Mastodon—Very large, with all the different shades from burnished brass to gold, with no two flowers exactly alike. Pkt. 25c.

Adonis—Lovely sky-blue. Pkt. 25c.

Panama Pacific—A huge deep yellow; some have the dark center, some without. A beautiful bedding color. Pkt. 25c.

Madam Steele—Elks purple, of fine form and enormous size. Pkt. 25c.

Pansies thrive best in a moist, sunny location and in rich loamy soil. Seed should be sown in the autumn for early spring blossoms, or can be sown early in the year for good flowers later in the spring. The plants must be transplanted twice in order to get the largest flowers; once from the seed box to a chosen bed, and again to the open garden. This is important for large size pansies; use manure liberally. The blossoms are usually larger in the spring and again in the fall, and while they bloom freely all summer, the blossoms are small during the hot months.

A. & M.'s Superb in Separate Colors.

Bridesmaid Giant—Shades of white shining rose, blotched. Pkt. 15c.

Giant Eros—This grand novelty produces very large flowers of a deep velvety brown color, with a broad golden yellow margin. The back of each bloom has the same broad margin as the front side, while the dark velvety center is shining through. Pkt. 15c.

Faust (King of Blacks)—Large, well formed, glossy black flowers. The plants are compact and bloom for a long time. Pkt. 15c.

Giant Pale Blue—Gigantic blooms of a delicate mauve-blue shade with paler center, freely produced on compact plants. Pkt. 15c.

Giant White (Black Eye)—Large well formed flowers with black center. Pkt. 15c.

Giant White—Very large, well formed white flowers with dark purple eye. Pkt. 15c.

Giant Yellow (Black Eye)—Large handsome flowers of a rich yellow with black eye. Pkt. 15c.

Giant Prince Henry—Dark blue, very large beautiful flower. Pkt. 15c.

Pansy Psyche—Not many of the pansy varieties have such a winning appearance as Psyche. The characteristic five velvety, violet blotches are surrounded by a broad white edge. It is an ideal exhibition or market pansy. Pkt. 15c.

Giant Curled Andromeda—A charming strain of pansy with elegantly frilled flowers, some so full as to appear double. The color is a very delicate apple-blossom, generally showing a soft lavender blue or rosy lilac hue, rendered still more effective by a somewhat darker veining. The blooms are of immense size. Unusually true to color from seed. A decided acquisition. Pkt. 20c.

Peacock—Handsome flowers of a rich purple. Pkt. 15c.

A. & M.'s PANSY in Mixtures.

Non Plus Ultra—The richest mixture ever sent out. Contains the Blotched and Masterpiece varieties. Pkt. 25c.

Madam Perret—Striking and distinct variety of unusually compact habit. The lower petals are generally of canary yellow, white or rose-pink marked with purple or crimson. The upper petals bright red and deep purple or outlined with a margin of white. Pkt. 10c.

Trimardeau or Giant Mixed—A very showy class of vigorous compact growth, flowers of an enormous size; finest strain. Pkt. 10c.

Bedding Pansies for Massing (See Viola)



Flanders Field Poppy

POPPIES.—The different varieties of poppies are always favorites for outdoor display and the cultivation of them being so extremely simple entitles them to a place in every garden. Seed should be sown where the plants are intended to flower, because it is difficult to transplant them with any measure of success. During March or April sow in row or groups and thin to about 1 foot apart.

Flanders Poppy.—The famous poppy of Flanders field. A single annual of blood red color. Abundant in the fields of Europe. **Pkt. 10c.**

OPPIES.—Mixed.

Shirley.—The most charming poppy in cultivation. The blossoms are bright and showy and include an almost endless variety of colors, from pure white, pink, terra cotta, salmon, chamois, and rosy carmine, to brilliant crimson, many of the flowers being beautifully flaked or edged with white. (Pkt. 5c) (oz. 25c).

Carnation Flowered Double Mixed.—Choice assortment of brilliant colors. Flowers very double and well fringed. The plants grow to a height of 4 feet and bear immense carnation-like blooms 6 to 8 inches across. (Pkt. 5c) (oz. 20c).

Nudicaule, Iceland Poppy.—A beautiful class of perennial poppies. Sow in March and they will flower the same year. The beautiful large blossoms are borne on wire-like stems above the beautiful fern-like foliage, with a great variety of colors. The Iceland Poppy has the most lasting qualities, as a cut flower, than any other poppy.

Single Mixed,—Pkt. 5c.

Double Mixed.—Pkt. 5c.

ORTULACA.—Beautiful race of dwarf plants for rock work or dry sunny locations, bearing glossy cup-shaped blossoms in brilliant colors.

Double Mixed.—Saved from the finest flowers only, and will produce a large percentage of doubles. **Pkt. 10c.**

Single Mixed.—Large flowers. Pkt. 5c.

YRETHRUM.—Handsome plants of easy culture. Invaluable for bedding purposes, especially for ribbon borders.

Golden Feather.—Fine compact habit of growth, with bright yellow foliage, largely used for edgings and ribbon borders. Height, 9 inches. **Pkt. 10c.**

Roseum Hybridum.—A hardy perennial, with red petaled flowers radiating from a golden yellow center. Buhach, or insect powder, is made from the dry leaves. Useful as a cut flower. Height 15 inches. **Pkt. 10c.**

RICINUS (Castor Oil Plant).—Effective for semi-tropical gardens. Easily raised from seed, and should be grown in deep, rich soil.

Ricinus Gibsoni.—A very fine variety with rich, lustrous, red foliage. Height, 5 feet. (Pkt. 5c) (oz. 15c).

ROMNEYA COULTERI (California Tree Poppy).—Also well known as the Mat-tilija Poppy; perennial. It is of value as a cut flower, lasting well in water, and its delicate primrose-like perfume is most acceptable. They never lose the crumpled folds that in the case of most poppies betoken newly-opened state. Flowers are four to five inches across, pure white, with a fine bunch of yellow stamens, resembling white, single Paeonys. **Pkt. 5c.**

RUDBECKIA (Golden Glow).

Coneflower.—Fine free flowering annual variety, forming a dense bush and producing in great abundance on long stems its bright flowers. The disc is brown, the flowers golden yellow, with large variety brown spots at the base. Very effective and useful for cutting.

Pkt. 10c.

SALPIGLOSSIS

Fine Mixed.—Highly ornamental half-hardy annual with large, veined, funnel-shaped flowers; much prized for cutting; very showy in beds or border. A bed of these beautiful plants is one of the most striking features of the garden during July and August. **Pkt. 5c.**

SALVIA, OR FLOWERING SAGE.—A tender perennial blooming the first season from seed and growing two or three feet high. The blossoms are borne on long stems in racemes or spikes, and are fragrant.

Splendens.—Gorgeous plants, with numerous flowers, which are displayed with striking effect against the deep green foliage. A bed of this flower is exceedingly beautiful during the autumn. Height, 2 feet. **Pkt. 10c.**

SCARLET FLAX.—See *Linum*.

SCARLET RUNNER.—See Beans.



Pyrethrum Roseum



Romneya Coulterii

SCABIOSA, OR MOURNING BRIDE.—The tall flowers are especially adapted for cutting and massing in the garden, also good as a background where a color effect is desired. Height 4 feet.

Azure Fairy.—A beautiful shade of light blue. A great favorite. **Pkt. 10c.**

Black Prince.—A very deep purple, almost black. Unique. **Pkt. 10c.**

Crimson.—Very effective. Pkt. 10c.

Snowball.—Large head of lovely pure white flowers. **Pkt. 10c.**

Tall Double Mixed.—Immense flowers; very double, contains twelve or more different shades. **Pkt. 10c.**

SCHIZANTHUS.—Very beautiful and interesting annuals. This is one of the easiest annuals to raise from seed. Sow in the open where plants are to flower. Exceptionally beautiful when in full bloom and literally covered with small orchid like flowers.

Mixed.—Pkt. 5c.

Wisetonensis Choice Mixed.—An improved mixture, beautifully spotted. **Pkt. 15c.**

SHASTA DAISY.—See Daisy.

SMILAX.—A perennial vine which thrives best in a shady location. Very useful for decorative purposes. **Pkt. 10c.**

STOCKS (Ten Weeks' Stocks, or Gilliflowers; Levoye).—The Stock is one of the many popular plants used for bedding. For brilliancy and diversity of color, fragrance, profusion and duration of bloom it is unsurpassed. Sow the seed in pans or boxes and transplant when large enough to an open sunny location. Be careful to save the weak and delicate plants, as these usually throw the best doubles. It is also a good idea to plant rather thickly so that the single can be weeded out as they appear. The seed can only be saved from single flowers, but as we purchase from the most reliable growers our Stocks produce a large percentage of doubles.

Dwarf Double Ten Week.—This dwarf variety is splendid for edging, carpet bedding, borders, and cut flowers. The different shades make very pleasing color effects. **Height 12 inches.**

White.—An late blooming variety. The color is an intense white.

Crimson.—The giant blossoms are of a deep crimson color.

Canary Yellow.—The flowers are of a bright yellow color.

Light Blue.—The flowers are of a light blue color.

Dark Blue.—The flowers are of a dark blue color.

Finest Mixed.—A mixture of all the above colors.

STOCKS—Continued.

Giant Perfection or Dresden.—Of branching habit with long stems which makes this variety very useful as a cut flower. The mixture contains 8 or more different colors. Height 2 ft.

Lavender.
Pink.
Purple.
Mixed.

Each.—Pkt. 10c.

STOCK, NICE.—An intermediate type, very useful for winter flowering if planted in the fall. Seed sown in February or March continue to bloom well on into the summer. Height 18 inches.

Nice, Giant Almond Blossom.—Quick growth with flowers of a very large size. The color is white shaded carmine. Pkt. 15c.

Nice, Giant Crimson King.—Long spikes, of a rich crimson color. Pkt. 15c.

Nice, Giant Empress Elizabeth.—Immense spikes of a rich bright rose. Pkt. 15c.

Nice, Giant Cote d'Azure.—Light violet blue, a very desirable shade. Pkt. 15c.

Nice, Monte Carlo.—Canary yellow. Pkt. 15c.

Nice, Finest Giant Mixed.—All colors. Pkt. 15c.

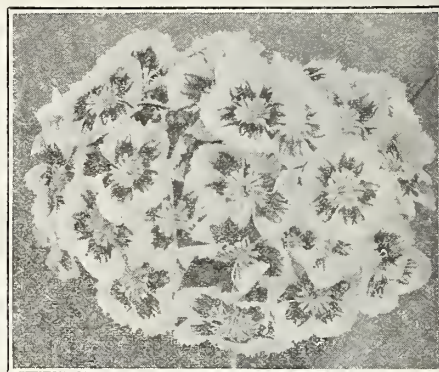
SUNFLOWER (Helianthus).—Stately, hardy annuals of easy culture. Useful for background, or as a fence and often grown for the seed. Height 6 to 8 feet.



California Double Sunflower

California Double.—Large, massive, bright yellow flowers, height 6 feet. Pkt. 5c.

New Red Sunflower is a very apt description of this new variety. The plant is of freely-branching habit, with well-shaped dark-centered flowers of bright chestnut red, merging to yellow at the tips of the petals; height 6 feet. Pkt. 10c.



Sweet William

SWEET WILLIAM (Dianthus Barbatus). A hardy perennial blooming the second year from seed. Grows one to two feet high and bears its flowers in clusters, at the end of a stiff stem. The individual flowerets are handsomely colored and marked. It makes a beautiful bedding plant, and is of easy culture.

Single Varieties, Mixed.—Very attractive. (Pkt. 5c) (oz. 50c).

Double Varieties, Mixed.—Pkt. 10c.

SWEET SULTAN.—See Centaurea Imperialis.



SWEET PEAS

We are headquarters for strictly high grade sweet pea seed; they are the best that money can buy.

CULTURE.—Sweet Peas will thrive on most any kind of soil if enriched with well-rotted manure, but a heavy clay soil produces best results. Ample arbor should be provided to attain highest perfection of bloom. The vines will grow eight feet tall and become a solid mass of bloom, which should be cut every day to prolong the life of the plant. Apply from time to time some Blood Meal fertilizer, and water abundantly, but see that there is good drainage, that the roots do not rest in wet, sour earth.

NEW GIANT SPENCER OF GREAT MERIT

Fiery Cross.—Giant waved flowers of an intense Orange Searlet. The color is not at all affected by our hot California sunshine and therefore needs no shading.

Constance Hinton.—A giant frilled Black-Seeded White. The stems, bearing four immense blossoms, are often 12 inches in length. Undoubtedly the best White Sweet Pea.

New Buttercup.—The nearest approach to a yellow Sweet Pea ever introduced. The blossoms are of a Rich Deep Cream, giants in size and are beautifully waved and frilled.

The Cardinal.—This is by far the best red Sweet Pea on the market. The color is an intense Poppy Searlet, resembling for brilliance the Poinsettia. The giant blossoms will not burn in the hottest sunshine.

Warrior Spencer.—Deep Chocolate, almost Black, unequalled for mixing with other shades for bouquets and table decoration. The darkest Sweet Pea yet introduced.

Each of the above 15c a pkt.

Early Bohemian Girl.—A beautiful deep pink of exquisite color, standards bluish orange. Pkt. 15c.

Florence Nightingale.—A soft, rich lavender, faintly shaded rose; wings well frilled and waved. Pkt. 15c.

Early Red Wing.—A bright glowing crimson of beautiful shade. Pkt. 15c.

Early Rose Morn.—Beautiful rose-crimson flowers borne on long stems. Pkt. 15c.

King White.—Sometimes called "The Perfect" White Spencer, superior in size, form and substance to all other whites, with beautifully waved, four-flowered sprays. Pkt. 15c.

Giant Spencer Types.—Immense blossoms of the frilled and waved varieties.

American Spencer.—Scarlet striped with white. (Pkt. 10c) (oz. 30c).

WEET PEAS—Continued.

Apple Blossom Spencer.—Standard bright rose, wings primrose with a flush of pink. (Pkt. 10c) (oz. 30c).

Asta Ohn, Spencer.—Soft pinkish lavender, seif. Very large and wavy. (Pkt. 10c) (oz. 25c).

Black Knight, Spencer.—Deep maroon, very large. (Pkt. 10c) (oz. 25c).

Blue Jacket Spencer.—A deep navy-blue. Quite distinct. (Pkt. 10c) (oz. 30c).

Clara Curtis, Spencer.—Very large, wavy cream or light primrose. (Pkt. 10c) (oz. 25c).

Countess Spencer.—“Hybrid,” a very large flowered variety, a lovely shell pink. Flowers usually four on a stem. (Pkt. 10c) (oz. 25c).

Dainty Spencer.—White with pink wavy edges. (Pkt. 10c) (oz. 25c).

Elfrida Pierson Spencer.—Shell pink with immense waved blossoms. (Pkt. 10c) (oz. 30c).

Florence Morse Spencer.—Delicate blush with pink margin; very large and one of the best Spencer varieties. (Pkt. 10c) (oz. 30c).

Etta Dyke Spencer.—Very large wavy, pure white. (Pkt. 10c) (oz. 30c).

Geo. Herbert Spencer.—A large Spencer rose crimson, suffused with magenta. (Pkt. 10c) (oz. 30c).

King Edward Spencer.—Most beautiful and richest of all the red shades. This large beautiful waved flower stands by itself, a bright crimson. (Pkt. 10c) (oz. 30c).

Loyalty Spencer.—Bright blue striped on white. (Pkt. 10c) (oz. 30c).

Margaret Madison Spencer.—Beautifully waved, light blue. (Pkt. 10c) (oz. 30c).

Mrs. Hugh Dickson Spencer.—Beautifully wavy apricot on cream. (Pkt. 10c) (oz. 30c).

Othello Spencer.—Deep rich maroon, very dark and adapted for many attractive combinations. (Pkt. 10c) (oz. 30c).

Wedgewood Spencer.—As named, a rich wedgewood blue. (Pkt. 10c) (oz. 30c).

Giant Spencer Mixed.—A splendid mixture of all the different Spencer types. (Pkt. 10c) (oz. 25c).

Selected Grandiflora Types.—The hooded type of Sweet Peas which are much more fragrant than the Spencers though lacking in size of bloom.

Mixture representing all shades.—(Pkt. 5c) (oz. 15c) (¼ lb. 40c) (lb. \$1.50).

WINTER FLOWERING SWEET PEAS.—A valuable race of early flowering sweet peas, which from a September sowing will give an abundance of blooms from Christmas onward. On account of their delightful perfume, sweet peas are particularly welcome during the days of winter.

A. & M. Xmas Dark Blue.—(Pkt. 5c) (oz. 25c).

A. & M. Xmas Lavender.—(Pkt. 5c) (oz. 25c).

A. & M. Xmas Pink and White.—(Pkt. 5c) (oz. 25c).

A. & M. Xmas Soft Pink.—(Pkt. 5c) (oz. 25c).

A. & M. Xmas White.—(Pkt. 5c) (oz. 25c).

A. & M. Xmas Mixed.—(Pkt. 5c) (oz. 25c).

Perennial or Everlasting.—See Lathyrus.

TROPAEOLUM CANARIENSIS.—See Canary Bird Flower.

VIOLET.—Hardy perennials, blooming freely throughout the summer and autumn. Of easy culture.

Cornuta Purple.—Fine, rich, purple. Pkt. 10c.

Cornuta White.—Pure white flowers, freely produced. Pkt. 10c.

The Czar.—Large, fragrant, deep violet flowers. Pkt. 10c.

Violet—Single, Sweet-scented.—Pkt. 10c.

VERBENA.—A half hardy trailing perennial of easy culture. It is well known as a bedding or border plant, and the improved large flowered and fragrant strains make it a handsome cut flower for low vases.

Mammoth Flowered, Mixed.—(Pkt. 10c) (¼ oz. 35c) (oz. \$1.25).

Mammoth Rose Queen (new).—Large brilliant rose. A splendid bedding plant. Pkt. 20c.

Pink Shades.—Mammoth strains of rose and pink shades. (Pkt. 10c) (¼ oz. 35c) (oz. \$1.25).

Pure White.—Mammoth strain. (Pkt. 10c) (¼ oz. 15c) (oz. \$1.25).

Purple and Blue Shades.—Mammoth strain. (Pkt. 10c) (¼ oz. 15c) (oz. \$1.25).

Scarlet Defiance.—Brilliant scarlet. (Pkt. 10c) (¼ oz. 35c) (oz. \$1.25).

WALL FLOWER.—These delightfully fragrant flowers are indispensable for every garden. Height, 18 inches.

Annual Mixed.—Pkt. 5c.



Verbena Rose Queen

GIANT ZINNIA

ZINNIA—Giant Double. Facts about this wonderful Annual.

The large double blooms often measure 5 inches across. Blooms continuously from April to October. Individual blooms last 6 weeks on the plant without fading. One of the easiest Annuals to raise from seed.

Giant Double White.—Pkt. 15c.

Giant Double Pink.—Pkt. 15c.

Giant Double Yellow.—Pkt. 15c.

Dwarf Double Mixed.—A valuable class

Giant Double Scarlet.—Pkt. 15c.

Giant Double Purple.—Pkt. 15c.

Giant Double Mixed.—Pkt. 10c.

only about fifteen inches high, very free blooming; flowers as large as the ordinary double Zinnia. Pkt. 10c.



Victory Quilled Zinnia

MAKE ATTRACTIVE THE OUT-OF-WAY PLACES

There are many annuals the seed of which may at the approach of the rainy season be scattered broadcast upon any preferred place about the premises. The winter rains will cause them to grow luxuriantly and bloom from early spring till far into the summer, with no more care than to pull up the weeds that appear at the beginning.

Here is a list of flowers that will bloom under such conditions: (All of these will reseed themselves.)

A. & M. Collection of Annuals, 10 pkts. 35c

African Daisy Sand Verbena Sweet Alyssum Calopsis California Poppy	Collection of ten packets, 35c	Shirley Poppy
		Gaillardia Marigold Gypsophila Portulaca

These will furnish cut flowers for your home nearly all the year.

NEW ZINNIAS

New Dahlia Flowered.—The plants of this new race are very sturdy and produce many flowers with stout stems. The broad petals are closely imbricated, seeming almost to be piled one upon the other. The flowers in full bloom often measure four inches in depth and six to eight inches in diameter. There is a decidedly wide range of colors from the Golden Yellows, Old Rose, many shades of pink and bicolors. Pkt. 25c.

Buttercup.—The new and pleasing color is a valuable addition to the collection of Giants. It is identical with the other Giant Zinnias having a pleasing deep primrose color which holds its color in bright sunshine. Pkt. 25c.

Giant Picotee Type.—Like the Picotee Sweet Peas, this very attractive novelty has taken well among the flower

fanciers and we are pleased to advise the Picotee markings are more pronounced this season with a larger range of colors, including many shades of Crimson, Scarlet, Pink and White with well defined Gold Picotee markings on slightly fringed petals. Pkt. 25c.

Stellata or Star Zinnia (Z. Mexicana Hybrids).—A beautiful low-growing border plant with star-like flowers ranging in color from deep crimson to white, including the yellow and orange shades. Pkt. 10c.

Victory-Quilled.—The petals of this type are peculiarly quilled and twisted with a pin wheel effect in the center. The outsides of the petals are of a coppery golden color and on the underside, various shades of Rose and Lilac, which when the petals twist, reflect pleasing Autumn colors. Pkt. 25c.

TREE AND SHRUB SEEDS

CYPRESS

Macrocarpa (Monterey Cypress). (Pkt. 10c) (oz. 20c).
Sempervirens (Italian Cypress). (Pkt. 10c) (oz. 30c).
Pinus Canariensis (Canary Island Pine). (Pkt. 10c) (oz. 35c).
Insignis (Monterey Pine). (Pkt. 10c) (oz. 35c).
Lambertiana (Sugar Pine). (Pkt. 10c) (oz. 35c).
Sequoia Gigantea (California Big Tree). (Pkt. 15c) (oz. 75c).
Sempervirens (California Redwood). (Pkt. 10c) (oz. 50c).

ACACIA

Acacia Baileyana—(Pkt. 10c) (oz. 50c).
Cultriformis (Knife Leaved Acacia)—(Pkt. 10c) (oz. 35c).
Dealbata (Silver Wattle).—(Pkt. 10c) (oz. 35c).
Floribunda.—(Pkt. 10c) (oz. 40c).
Lophantha (Crested Wattle).—(Pkt. 5c) (oz. 15c).
Melanoxlyn (Blackwood).—(Pkt. 10c) (oz. 35c).

CONIFER—CEDAR

Libani (Cedar of Lebanon)—(Pkt. 10c) (oz. 50c) (B. \$5.00).
Cryptomeria Elegans—(Pkt. 10c) (oz. 50c).
Japonica (Japan Cedar)—(Pkt. 10c) (oz. 30c).
Juniperus Virginia (Red Cedar)—(Pkt. 10c) (oz. 25c).

PALMS

Champacrops Excelsa (Windmill Palms)—(Pkt. 5c) (oz. 10c) (B. \$1.00).
Corypha Australia (Australia)—(10 seeds 10c) (100 seeds 75c).
Phoenix Canariensis (Canary Island Palms)—(10 seeds 10c) (100 seeds 75c).
Washington Filifera—(Pkt. 5c) (oz. 10c) (B. \$1.00).
Washington Robusta—(Pkt. 5c) (oz. 25c) (B. \$2.00).

EUCALYPTUS

Globulus (Tasmania Blue Gum)—(Pkt. 15c) (oz. 50c).
Corynocalyx (Sugar Gum)—(Pkt. 15c) (oz. \$1.00).
Robusto (Swamp Mahogany)—(Pkt. 15c) (oz. 50c).
Rostarta (Red Gum)—(Pkt. 10c) (oz. 50c).
Rudis (Desert Gum)—(Pkt. 10c) (oz. 60c).
Tereticornis (Gray Gum)—(Pkt. 15c) (oz. 75c).

MISCELLANEOUS

Camphor Officinalis (Camphor Tree)—(Pkt. 10c) (oz. 25c).
Gravilleo Robusta (Silk Oak of Australia)—(Pkt. 10c) (oz. 40c).
Jacaranda Mimosaefolia (Brazilian Jacaranda)—(5c each) (Per dozen 40c).
Magnolia Grandiflora—(Pkt. 10c) (oz. 35c).
Schinus Mollis (Mexican Pepper Tree)—(Pkt. 5c) (oz. 10c).
Melia Umbraulformis (Texas Umbrella Tree)—(Pkt. 5c) (oz. 10c).
Robinia Pseudacacia (Black Locust)—(Pkt. 5c) (oz. 10c).
Wild Sour Orange—Write for Price.
Sweet Orange Seed—Write for Price.
Bitter Almond—(Per lb. 30c postpaid) (10 lbs. or more 25c per lb. f. o. b. here).
Myrobalan Plum—(Per lb. \$1.00).
California Wild Walnut—(Per lb. 25c prepaid).
Apricot—(Per lb. 20c postpaid) (10 lbs. 75c f. o. b. here).
Peach—(Per lb. 15c postpaid) (10 lbs. 50c f. o. b. here).

SMALL TREES IN FLATS

Eucalyptus—Tereticornis, Rostrata, Globulus and Corynocalyx. Price—\$2.00 per flat of 100 trees, \$15.00 per 1000 trees, f. o. b. here.

No Excuse for Inefficiency

With Agriculture taught in the elementary schools, demonstrated by practical gardening. With students of the high schools doing actual farming in all its phases of agriculture including animal husbandry and tractor work. With your county farm advisor at your call. Your State University offering free a six weeks course in agriculture or a course in any particular branch of agriculture. Or if you cannot spare the time to go to college, the education will come to you by correspondence.

Send to the University of California College of Agriculture Berkeley, California. Ask for circular No. 113 entitled Correspondence Courses in Agriculture, by W. G. Hammel.

This circular contains a list of Bulletins and Circulars on other subjects.

In addition to all this the United States Department of Agriculture offers you free of charge, literature on almost any conceivable subject in which you may be interested, only ask for what you want.

As though all this were not enough you have thrust upon you the annual seed catalog which helps you out where all else fails. It tells you in a nutshell what to plant, when, where and how to plant it, and most important of all your seed catalog tells you where to buy the most reliable seed for each particular condition of soil, climate, and market.

There is positively no excuse for inefficiency.

Read this compliment.

L. T. Hull; Vocational Supervisor for East Hawaii School Dist.:

"I wish again to thank you for your interest in our gardens which is due to your work in making them above the average."

Skinner System of Irrigation

Better Than Rain for Large or Small Gardens and Lawns



Built to fit your garden. Just as well suited to your lawn or flower border. Furnished complete, ready to erect. No special tools needed. Erected in a few minutes time. Lasts a life time. Quick to dismantle, easy to move. Each line waters a strip 50 feet wide along its entire length. It is a water saver, a time and worry saver. It knocks all the drudgery out of gardening. And best of all; it grows bigger and crisper vegetables, more and handsomer flowers. Never again need you wish for rain. The solution is a Skinner System, which costs but little more than garden hose, is many times as efficient, and is practically indestructible. It means an end to your greatest garden worry; absolute insurance against drought; less work and a better garden. If interested state your requirements and write for estimate of cost.

READY MADE

For quick delivery we can furnish pipe in any lengths all ready to attach to your garden hose, and may be transported to any part of your garden.

Price—F. o. b. here, 50c per foot, plus \$5.50 for each coupling attachment.

A fifty foot line will water a space 50x50 feet or 2500 square feet. Other lengths will water in proportion. Can be furnished in any length. Built to suit your garden.

You can have all fancy fruit by using the

FRUIT PROTECTING BAGS

Protects your fruit against injury from insects, wind and sunburn and promotes a large tender hot-house growth.



These bags are String and Button-Tied.

We recommend them for Grapes and Loquats.

They are not expensive and should be used largely by the home grower as well as by the commercial grower.

Price Grape Bags

Small size	4 1/2 in.	\$ 8.00 per 1000	\$1.00 per 100
Medium	5 "	9.00 per 1000	1.10 per 100
Large	6 "	10.00 per 1000	1.25 per 100

Price Loquat Bags

Small size	6 in.	\$10.00 per 1000	\$1.25 per 100
Large	8 "	12.00 per 1000	1.50 per 100

PLANT DEPARTMENT

We have during the season at our main store at 620 S. Spring St., and at our Branch Store, 767 So. Central Ave., a full assortment of Berry plants of all the popular varieties for home gardens and roots of Rhubarb, Asparagus and Horseradish. Prices obtained at the store. Write for quantity price on all varieties.



Banner

Early Strawberries Planted 18 Inches Apart in Rows Two Feet Apart



Ettersburg No. 80

GROW MORE BERRIES

No other line of gardening promises greater returns than berries. When berries brought the grower 3c and 5c a box it was profitable, but at the price of 10c and 15c to the grower, which prevailed throughout last season, it would warrant some competition with more acreage.

First consider what help you can count upon for picking, then apportion your acreage accordingly.

The present method of setting plants a few inches apart on little narrow ridges too close to permit of irrigating without uncovering the roots is not conducive to best results.

Set the plants in December, January or February, 18 inches apart in rows two feet apart. This will require 15,000 plants per acre. Keep the soil in perfect condition to permit the runners to root freely, but train them to grow along the row. Then do not disturb them except to cultivate and weed. By January or February of the following year you will have a field like shown in the above picture in full bearing, and the vines will continue bearing until late in the season. Continue the cultivation, allowing the runners to set as before. The profit in earliness and productiveness the second season is conclusive that this method is better than is now generally pursued.

Ettersburg No. 80 Is a large solid berry. It is very productive of fine red berries that are of large size and have a large, clean-cut green calyx or hull. The blossoms are very large and the runners very strong. The plant is extra vigorous and deep rooting and the foliage leathery. In the fall of the year the young foliage is of a bluish cast. The fresh fruit is of fine dessert quality, and for flavor as a canned berry it is the very best, a deliciousness found in no other variety. It is red, and red to the center. It is a great canning sort. No. 80 is about the best of all hybrid strawberries for semi-arid sections fifty miles or farther from the coast. Also on clay soil, and in high altitude.

Price—(Per 25 \$1.00) (100 \$2.00) (1000 \$12.00).

The Banner Strawberry is claimed by Mr. Philippi to be the best of all the local varieties because of its uniformly large size, red, glossy appearance, good keeper, non-acid flavor, and always showy, on which account the dealer prefers it.

Price—(Per 25 75c) (100 \$1.50) (1000 \$10.00).

Klondike For many years the Klondike has been the favorite with large growers and at the present time more of Klondike are being planted than all other varieties combined. It is excellent for shipping.

Price—(Per 25 50c) (100 \$1.25) (1000 \$9.00).

Brandywine This is a standard variety and has been planted extensively by larger growers in this section for more than twenty years. It is a good shipping variety. Price—(Per 25 50c) (100 \$1.25) (1000 \$9.00).

Carolina One of our good customers in North Carolina was kind enough to send us some plants of this variety. Mr. Jamison planted them and he reports they are wonderfully productive and a delicious berry, similar in appearance to the Banner. The foliage is large to protect the berry and the stems support the berry well above the ground. We have a very limited number of plants.

Price—(Per 25 \$1.00) (100 \$3.00).

BLACKBERRIES		Prices postpaid	
Thornless—Corey's Mammoth	40c	each, 3 for	\$1.00
" Common	30c	" 3 "	.75
Mammoth	10c	" 3 "	.25
Macatawa	10c	" 3 "	.25
Crandall's Everbearing	10c	" 3 "	.25
Himalaya	10c	" 3 "	.25
RASPBERRIES			
St. Regis—Early Red Cap	10c	" 3 "	.25
Cuthbert—Standard Red Cap	10c	" 3 "	.25
King of the Cliff—Black Cap	10c	" 3 "	.25
Van Nuys Best—Black Cap	15c	" 2 "	.25
Dew Berries—Gardena	10c	" 3 "	.25
Logan Berries	10c	" 3 "	.25
Phenomenal	10c	" 3 "	.25

GRAPES

We aim to have on hand during the season the following varieties of one-year-old rooted grape cuttings:

One year old rooted cuttings, Muscat, Red Emperor, Black Morocco, Rose of Peru, Black Hamburg, Cornichon, Thompson Seedless, Tokay, Eastern Concord.—(Each 25c) (dozen \$2.00).

Persiaq Grapes—Sold out.

TREES

We have a limited number of trees of the large red Mexican Mulberry. These trees are well rooted and stocky, from two to three feet tall and can be sent by mail.

Price—50c postpaid.

We have for sale throughout the season at our store, 620 So. Spring Street, citrus trees. Every home garden should have at least one each of Navel and Valencia oranges and one Eureka lemon.

CHRYSANTHEMUMS

Standard—Anemone—Pompon

No flower is quite as satisfactory as the Chrysanthemum. There are few insect pests to destroy, no fungus disease attacks them. They need no replanting for years.

Get started right and you will have pleasure in your flowers for years with comparatively little care.

It is not satisfactory to start with seed except for experimental purposes. To the gardener this is very interesting but you want fine large flowers and you want them as quickly as possible. Therefore write Sadie A. Thomas, 308 Stephenson Ave., Box A, Pasadena, Cal.

Ask for her catalog, it will help you select your order.

Miss Thomas has the largest collection in America.

A WORD TO THE SUCCESSFUL LITTLE LANDER

As you are enjoying the possession of your little ranch, your comfortable home, your domestic animals and the growing of your crops; do you ever stop to realize how it all came about, how you work sixteen hours a day while other men work eight at \$3.50 per day; and how you accomplish twice as much per hour and how you are forever planning and outlining your work. Do you realize that you are worth more than four hired men at \$3.50 per day?

That is why you are happy in possession of your little ranch and all the comforts that right living bring with it.

We know hundreds of such little landers. Some are widows, some are old men, others young married people. Everyone can by right living become a successful little lander if they will study this catalog.

REVIEW

WE have with much diligence labored unselfishly for twenty-seven years to serve our patrons that they may attain the best results from their labor.

It is gratifying to us to count the many homes made beautiful by an intelligent planting of our seeds. It is a pleasure to shake the hands of the many successful ranchers who have followed our advice and have become prosperous by constant planting of our seeds. It is with pride we note the large industries made possible by our introductions.

It is to our credit that we have been largely instrumental in making Los Angeles County the richest agricultural county in the United States.

Spurred by such gratifying results it is our determination to more diligently than ever, continue the policy pursued in the past, but do so more intelligently with a fixed purpose to benefit our patrons to the fullest extent.

In this catalog we have been as liberal with information as space would permit.

We yet wish to call attention to some of the important things that may have escaped attention.

Do not fail to read "The Seedsmen" story beginning Page 3.

If you are an amateur read the primary instructions on pages 7, 8, 9 and 10. If you want information on special subjects, read the pages devoted to that subject, or see list of agricultural books on page 16.

BEAN GROWERS see pages 17-18.

CABBAGE GROWERS see page 20.

CAULIFLOWER GROWERS see page 22.

CELERY GROWERS see page 24.

SWEET CORN GROWERS see page 25.

EDIBLE GOURD—See Page 29—Price per pkt. 15c.

HOW TO MAKE a living on one acre, see page 30.

LETTUCE GROWERS see page 31.

MELON GROWERS see pages 33 to 38.

ONION GROWERS see pages 39 and 40.

Also see back cover page and do not fail to send 50c for one packet of each of these five giant onions.

PEA GROWERS see page 43.

PEPPER GROWERS see pages 44 and 45.

POTATO GROWERS see page 46.

SWEET POTATO GROWERS see page 47.

SPINACH GROWERS see page 51.

SQUASH GROWERS see pages 48 and 49.

TOMATO GROWERS see pages 54 and 55.

HOUSEWIVES read page 56.

READ PAGES 59 and 60.

ORCHARDISTS read about cover crops pages 61 and 62.

STOCKMEN read about grasses beginning page 63.

DAIRYMEN read about silos and silage crops beginning page 68.

EVERYBODY read page 78.

Make your home beautiful with flowers. Have something blooming every day in the year, see the hints on page 78 and have your cottage covered with beautiful flowers. See the list of bulbs, page 77.

An order this year will put your name on our mailing list. When in doubt about what to plant write us describing your local condition and whether you will grow for local market or to ship.



Pearl Cauliflower Introduced by Us in 1898.



Trimmed to Ship
Seed Planted July 1; Marketed Dec. 1.

Lawn and Garden Requisites

On this page we can only hint at some of the lines we carry, trusting you will, if interested, write and inquire for more information. We carry a full line of Lawn Mowers, Garden Hoes, Pruning Knives, etc.

GARDEN TOOLS--See Pictures

- No. 1. Water's Tree Pruner, 4 to 10 ft. \$2.00 to \$2.50.
 No. 2. Pond's Handy Garden Tool, 50c. By mail 60c.
 No. 3. Excelsior Weeder, 20c. By mail 30c.
 No. 4. Tree Pruner, all sorts, from \$1.50 to \$3.35.
 No. 5. Garden Trowels, all kinds, from 25c to 75c.
 No. 6. Grass Hooks, or Sickles, 50c, 65c, 75c.
 No. 7. Dibble, 75c and \$1.00. By mail 85c.
 No. 8. Pruning Saws, double, single and curved edge, \$1.00 to \$1.50.
 No. 9. Havil's Weeder, 50c. By mail 60c.
 No. 10. Hedge Pruners, \$1.50 to \$3.00 each.
 No. 11. Pruning Shears, from 75c to \$4.00 each.
 No. 12. Scuffle Hoe, 8-in., \$1.25; 12-in., \$1.50.
 No. 13. Ohio Wire Rake, \$1.75.
 No. 14. Hoe and Rake combined, \$1.25.
 No. 15. All Steel Rake, \$1.50.
 No. 16. Warren Hoe, \$1.50.
 No. 17. Turf Edger, \$1.25.
 No. 18. Steel Spade, \$2.00.
 No. 19. Spading Fork, \$1.50.
 No. 20. Potato Hooks, \$1.50 to \$2.00.
 No. 21. Garden Hoe, from 4 to 10 in., \$1.25 to \$2.00.
 No. 22. Steel Shovels, \$1.75 to \$2.50 each.
 No. 23. Manure Fork, \$1.35; Hay Fork, \$2.00.

Bailing Spades—\$3.50.

Ladies' Garden Sets—Made of best material, Per Set \$3.00.

LAWN MOWER

Capitol Lawn Trimmer and Edger—Does what Lawn Mowers leave undone. Having one side without wheel, it can be run close to walls and trees, cutting grass clean and quick. Can also be used for trimming edges of walks, etc.; 4 steel blades, 6 in. wide. See No. 1. Price \$10.00 complete.

Lawn Mowers—The following is a list of our high-grade ball-bearing Lawn Mowers. They are made of drop forged steel throughout and are very easy running machines. See Nos. 2 and 3.

Lassen—8-in. wheel—

14 inch	\$ 9.50
16 inch	10.00

Lenox—9-in. wheel—

14 inch	\$10.50
16 inch	11.00

Grass Catchers—14 and 16 inch galvanized iron bottoms, \$1.75 each.

GARDEN HOSE

Owing to the general dissatisfaction of selling cheap and inferior hose, we have discarded all brands except those that have sold for a number of years and have proven satisfactory.

N. 4. A & M Moulded Hose is equal in quality to the highest priced grades and none is superior. ½ in. 20c; ¾ in. 21c; 1 in. 22c.
 Hose Washers, per doz. 20c postpaid.

No. 5. The Cooper Brass Hose Mender, 30c each prepaid.

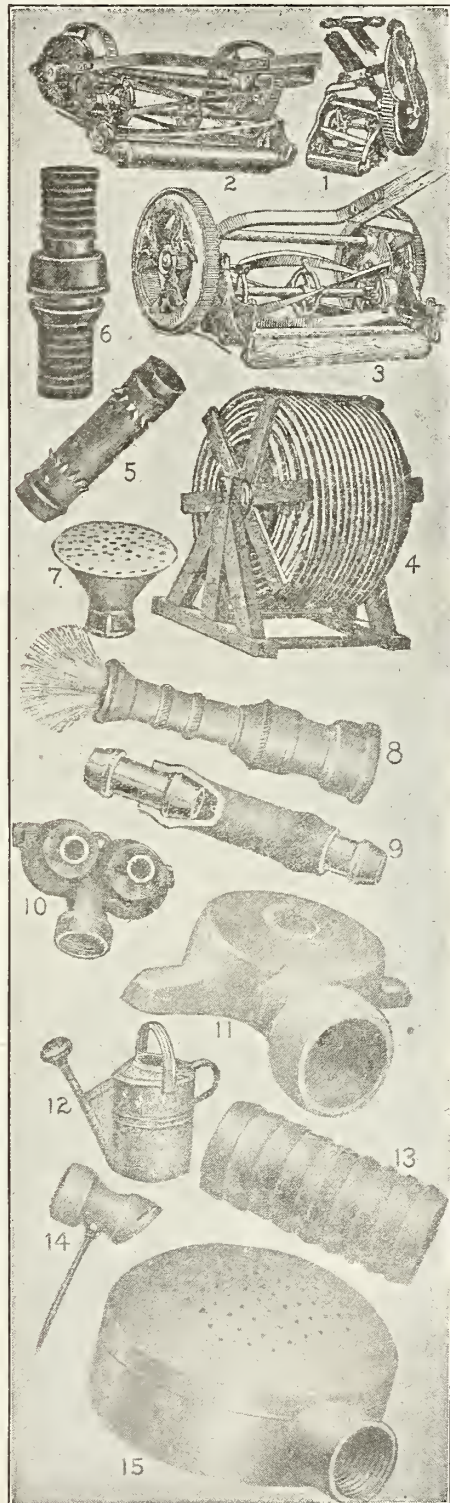
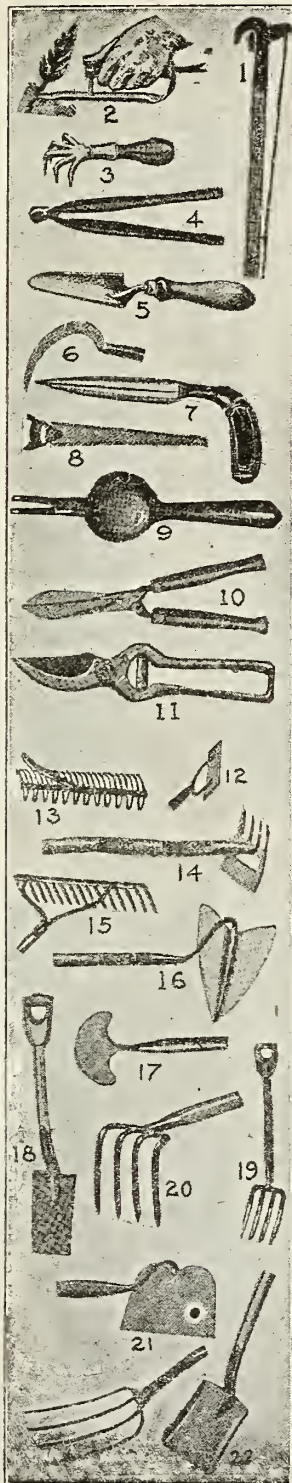
... 6. Brass Hose Couplings, ½ in. or ¾ in. Per pair 60c, prepaid.

No. 12. Sprinkling Can, 6 qts. \$1.50; 8 qts. \$1.70; 10 qts. \$1.90; 12 qts., \$2.00. F. o. b. here.

No. 13. Brass Hose Menders, 25c prepaid.

No. 14. Fan Sprinkler, 40c prepaid.

No. 15. The Fountain Sprinkler, \$1.50 prepaid.



- No. 7. The Rose Nozzle, \$1.00 prepaid.
 No. 8. Boston Nozzle, 90c prepaid.
 No. 9. Wooden Hose Mender, 35c per dozen prepaid.
 No. 10. Twin Sprinkler, 50c prepaid.
 No. 11. Wilgus Sprinkler, 50c prepaid.

NURSERY AND FARM REQUISITES—(Continued)

Pennsylvania Fruit Picker



Pennsylvania Fruit Picker

No ranch is completely equipped without this valuable tool. It is always the choicest fruit that cannot be reached from the ladder, you do not wish to knock it down with a club, as the fall would bruise it. Use the Fruit Picker and the fruit is caught in the pocket prepared for it. Every ranch that has half a dozen or more fruit or walnut trees should have one or more Pennsylvania Fruit Pickers. Price 75c. By mail 85c.

Gellow's Fruit Picker.—Price \$1.60 postpaid.

Asparagus Knife.—Price 90c, by mail \$1.00.

Asparagus Moss.—We always have on hand a large supply of moss for asparagus shippers. Price on application.

CLAY FLOWER POTS
Price on Application.

SEWING TWINE

No. 1.—Per lb., \$1.00;
Bdl. 12 lbs., \$11.40.

Yucca Tree Protectors



Yucca

The Yucca Tree Protector is made from the soft spongy Desert Palm, and will last years exposed to the weather. Wires go entirely around the protector, thus holding it in place, even should it crack a little while in use. Protect your trees against the hot rays of the sun, rabbits, gophers, and be sure to use this protector if bothered with Tree Borer.

Size	Per 1000		Per 100	
	Lbs.	Price	Lbs.	Price
14 in.	90	\$11.50	9	\$1.50
18 in.	125	13.00	12.5	1.50
24 in.	150	16.50	15	2.00
30 in.	200	19.00	20	2.25
36 in.	250	23.50	25	2.75



Expan

Parafine Paper Tree Protectors

These Protectors are perforated, giving a free circulation of air around the tree trunk. The Parafine preserves the paper, making the Protector very durable. Will not split or tear.

Size	Per 1000		Per 100	
	Lbs.	Price	Lbs.	Price
14 in.	50	\$11.50	5	\$1.50
18 in.	65	13.00	6.5	1.50
24 in.	85	16.50	8.5	2.00
30 in.	106	19.00	10.6	2.25
36 in.	127	23.50	12.7	2.75

All prices f. o. b. Los Angeles

Grafting Wax—(¼ lb. 20c) (½ lb. 30c) (lb. 45c) postpaid.
Balling Twine—(5-lb. ball \$1.50).
Budding Twine—(Per ball 50c). Postpaid 60c.
Budding Cloth—(Per square yard 70c, prepaid).

POT LABELS

Plain	100	1000	Painted	100	1000
4.....	20c	\$1.35	4.....	25c	\$1.60
5.....	25c	1.60	5.....	30c	1.95
6.....	30c	1.85	6.....	35c	2.35

TREE LABELS—Copper wired and painted:
3½ inch\$0.30 per 100 \$2.60 per 1000

HANGING BASKETS—Earthenware:
7 inch.....\$.35 10 inch.....\$.75
8 inch......50 14 inch.....1.50

HANGING BASKETS—Wire:
10 inch..... 50c 12 inch..... 75c

WALL POCKETS—Wire:
10 inch..... 65c 12 inch..... 85c

Thompson's Tree Support



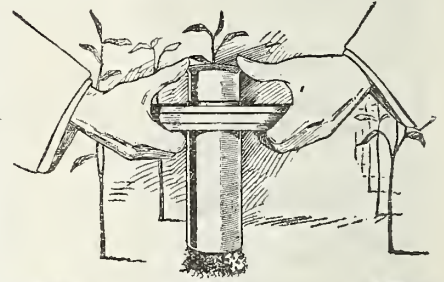
Place the supports above projecting branches on the limb to secure them against slipping down. These supports are out of the way of everything. They are perpetual. There is no



further expense after putting on. The proposition is simply to make opposite limbs support each other, or the center limbs to support the outer limbs, thus doing away entirely with the ordinary wooden prop. (Per 100, \$2.50) (1000 \$22.50) Weight 10 to a lb.

TRANSPLANTER

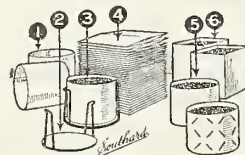
A Transplanter that does the work without disturbing the roots. It first makes the hole where you wish the plant, then picks up the plant root and all, without disturbing it, and sets the plant into its new location without checking its growth. A child can operate it. Just the thing for Eucalyptus growers and nurserymen. (50c) (by mail 60c).



Taken out of here - to be set in here

TRANSPLANTER

The Expan Planting Pot



The Expan Planting Pot

Made of heavy tar paper. Open top and bottom. For propagating plants, trees and shrubs—no waste space—no breakage. For the nurseryman, florist and market gardener. You can grow melons, squash, cantaloupes, cucumbers, etc., three weeks earlier in these pots than out in the open. When setting the plants in the field plant the pot and all, leaving about one inch above the top of the soil; this protects the

tender plant from cut worms, wire worms, moles and field mice.

THE EXPAN PLANTING POT

Size	Price per 1000	Price per 100	Wt. per 1000
3x8	\$11.00	\$1.75	85 lbs.
3x6	8.90	1.55	66 lbs.
3x5	7.25	1.45	55 lbs.
3x4	6.25	1.35	44 lbs.
3x3	4.75	1.25	58 lbs.
2x8	8.00	1.45	58 lbs.
2x6	6.25	1.35	44 lbs.
2x5	5.25	1.25	37 lbs.
2x4	4.60	1.00	29 lbs.
2x3	3.75	.75	22 lbs.
1½x5	4.60	1.00	28 lbs.
1½x4	3.75	.75	22 lbs.
1½x3	2.95	.50	17 lbs.

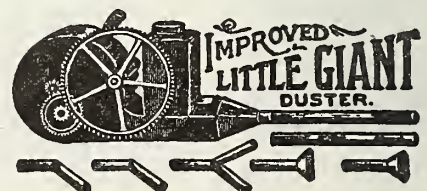
All prices f. o. b. Los Angeles

RAFFIA. We have been unable to secure Raffia for the past year and as a substitute we are offering Argentine Fibre, which is very similar. Most gardeners are using this in preference to the tape. Price per lb. 50c.

GREEN MOSS—Per lb. 20c, bales \$9.00 f. o. b. Los Angeles.

SPAGNUM MOSS—For packing plants, trees, asparagus, etc. Per bale \$3.50.

Little Giant Duster



The best dry powder gun; will distribute any dry insecticides and fungicides. Will do as much work in a day as a horsepower sprayer. Dusts two rows at once. Weight, packed, 15 lbs. Price \$12.00.

NURSERY AND FARM REQUISITES—(Continued)



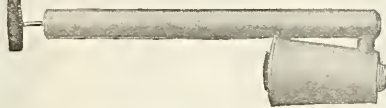
THE FEENY DUST GUN

Is a mechanically perfect apparatus which emits powder in clouds of right consistency from any position and in any direction, downward, upward or horizontal.

Feeny Dust Gun, \$2.50. Ask for circular.

LOWELL'S POWDER SPRAYER

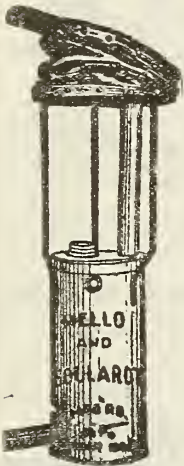
A successful hand sprayer for sulphur and all powder disinfectants. Capacity one quart. The cheapest and best small powder sprayer on the market. Just right for home gardens. Price \$1.00. Wt. 3 lbs.



Lowell Powder Sprayer

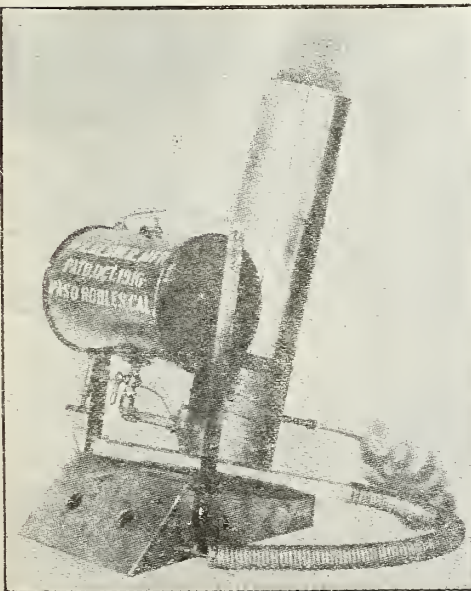
Eureka Squirrel Exterminator

With the use of carbon bi-sulphide, this is the best and cheapest implement with which to eradicate the squirrel pests on your land. We can confidently recommend the use of this machine in vineyards, orchards, grain fields, pasture lands, etc. It is of simple construction, best galvanized sheet steel with bellows attached. The working of the bellows causes the carbon bi-sulphide in the machine to generate a gas, which is forced into the burrows of the squirrels, thus killing them instantly. The exterminator forces no liquid into the runs, only the gas, thereby saving 75% of the carbon bi-sulphide, over the old way of saturating balls of cloth or cotton. A colony of squirrels can soon destroy \$50.00 worth of vegetation. Price \$10.50. Weight, crated, 12 lbs.



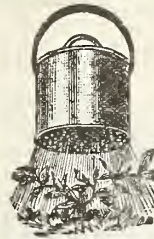
Eureka Squirrel Exterminator

Kester Automatic Vaporizer



For killing squirrels, gophers, etc. Safer and more efficient than poison, traps, and all other methods combined. It works automatically, forcing distillate vapor, which is heavier than air into the bottom of the burrows, the vapor is inhaled by the rodents and the young and old die in a few minutes. This machine has been tested and proven to be the most efficient and cheapest method of exterminating ground rodents by the U. S. Health Service, San Francisco, Cal.; Los Angeles County Horticultural Commission; L. R. Alderman, Pasadena, Cal., professional pest

destroyer, used six machines on 750 acres. These machines are guaranteed to do the work when the directions are carefully followed. Price \$22.50 f. o. b. Los Angeles.



Sulphur Duster
½ gal. 60c; by mail 70c



Jumbo Powder Blower.

To eradicate fleas, bed bugs, etc., use this blower. Also excellent for dusting house plants. By mail 35c.

AMERICAN

BEAUTY DUSTER

The best dry powder duster on the market. For Orchard, Vineyard, Garden and Field. If interested write for circular.

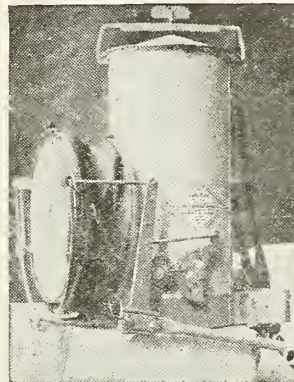
Because of its bellows capacity, it can be used where no other knapsack sprayer could possibly reach.

Its spiral agitator and fine screens cause it to deliver a finer dust than any other machine, hence it is more thorough and economical.

It is built on correct principles and has been used under the most severe conditions, with remarkable success.

Our hundreds of satisfied customers are our best advertisement.

Standard size, wt. 14 lbs., \$18.00.
Vineyard size, \$16.00.



American Beauty Duster

Out-O-Sight Mole Trap

This trap has been in use for a number of years and is the most successful Mole Trap patented. It is placed over the runway in such a manner that it catches the mole if he travels in either direction. Price \$1.15 by mail.



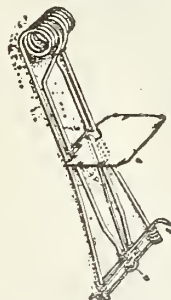
Out-o-Sight Mole Trap

MACABEE GOPHER TRAP

This is the most convenient gopher trap yet manufactured. It is easy to set, small and can be extended far down into the hole. Price, postpaid, 35c.

BOX GOPHER TRAP. This trap is used extensively by Japanese gardeners. Is easy to set and sure. Price, by mail, 35c.

STEEL GAME TRAPS. All sizes. When ordering, state what game you wish to catch. Prices, 25c to \$1.00.



Macabee Gopher Trap

EASY SET MOLE TRAP catches them going and coming. A child can set it with perfect safety. Price, 75c; prepaid \$1.00.

IF INTERESTED IN ANY ITEM
ON THESE PAGES, DO NOT HESITATE
TO WRITE FOR CIRCULAR
OR ASK FOR FURTHER INFORMATION.



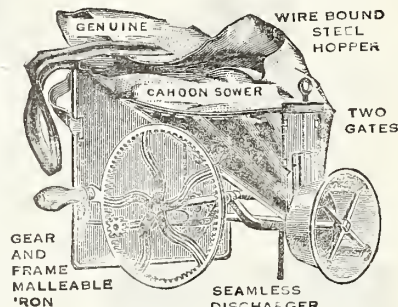
Easy-Set Mole Trap

NURSERY AND FARM REQUISITES—(Continued)

When wanted by Mail, add postage. See inside front cover page.

We have enumerated only a few of the specialties we carry. We have always on hand a full line of garden tools of every description, and for every conceivable purpose. Ask for anything you may want in this line. We have it.

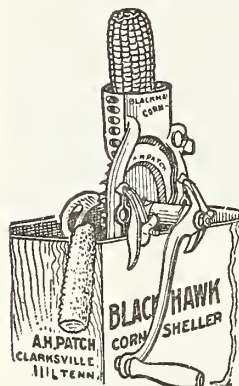
The Standard Sower, acknowledged to be superior to all other hand sowers. Gives perfect satisfaction and can be used for sowing alfalfa and grains broadcast. Sows from four to eight acres per hour at a common walking gait. A saving of four-fifths of the labor and one-third of the seed by its use. A person entirely unaccustomed to sowing by hand can use this machine with perfect success. **Price—\$5.00, f. o. b. here.** Weight crated, 8 lbs. Can be sent by mail.



Cahoon Sower
Weight, crated, 8 lbs.

Black Hawk Corn Sheller

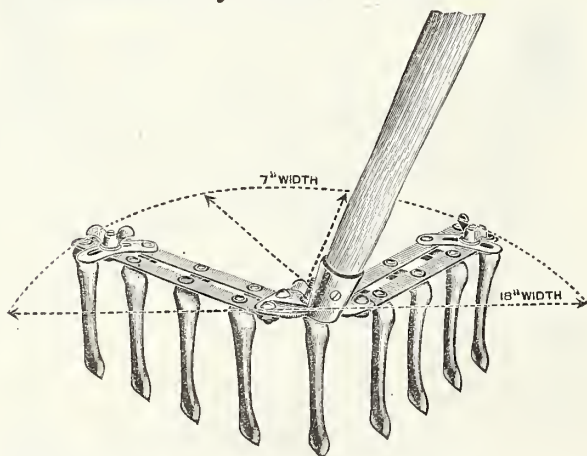
Shells easily, and rapidly separates the cob from the corn. We give it special recommendation to poultry men. **Price—\$3.50 f. o. b. here.** Weight 20 lbs. packed.



Corn Sheller

It sows evenly all kinds of grass seeds, grains and fertilizers. Clover is thrown a width of 18 ft.; timothy, 15 ft.; alfalfa, 20 ft.; wheat, 25 ft.; oats, 18 ft.; millet, 18 ft. An operator can sow from 40 to 50 acres per day. **Price—\$2.00 f. o. b. here.** Weight 9 lbs.

Pull-Easy Hand Cultivator

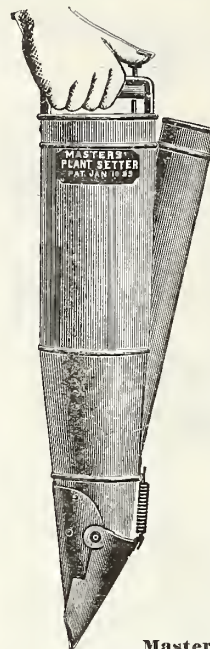


When the arms are spread out to full width of 18 in. this cultivator is like a rake.

For narrower rows the outer ends of the arms can be closed to any width down to 7 in. Human hands, loosening and tightening the thumb nuts, are the only tools needed.

The shape of the teeth and the way in which they are attached to the steel side bars makes the cultivator entirely different from any ordinary rake because the teeth penetrate the ground, stir it up and pulverize it thoroughly without the operator being obliged to exert any downward pressure on the handle.

The middle tooth can be instantly removed permitting narrow rows of small plants to be cultivated two at a time.
5-tooth Cultivaor **1.25** 9-tooth Cultivator **\$1.75**



Master's Plant Setter

The only hand mechanical plant setter on the market. No stooping when using it, therefore no lame backs. All kinds of plants—Cabbage, Tobacco, Tomatoes, Cauliflower, Strawberries, Sweet Potatoes, etc., are set in water and covered at one operation. Weight 10 lbs. **Price—Each \$5.50 f. o. b. here.** Ask for circular.

"Norcross" Cultivators—Hoes & Weeders

The Modern Tools—for Garden and Flowers



Like the Human Hand, these tools cultivate closer to plants without injuring them, than any other implement known; leaving the soil level, loose and untrampled.

Cost but a trifle more than the common Hoe—accomplish much more and better work with decidedly less labor. The sharp tapering shovels enter the soil freely, literally tearing up every inch of it, from 1 to 6 inches deep as required.

Detachable Steel Prongs—Malleable Head—Extra High Grade Handles and beautifully finished throughout.

Three sizes, suited to both men and women.
PRICES EACH—5-prong (wt. 3 lbs.), \$1.50; 3-prong (wt. 2 lbs.), \$1.00; Midget (wt. 12 oz.), 75c. Postage extra. See postal rates on inside front cover page.

Black Hawk Feed Mill

The grist mill without a fault. Light running, well built. It will last a lifetime. Grinds all kinds of grain fine or coarse. **Price \$4.00 f. o. b. here.**

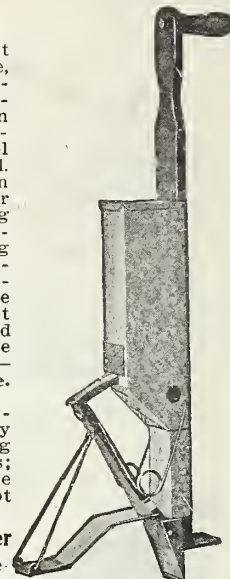


Black Hawk Feed Mill

INFORMATION

Our Information Department Is Free To You

Our Information Department is like a Correspondence School, except that it is all free to you and you are welcome. Read pages 1 to 10. Notice the Call Counter, and make use of it. The information you want is in this catalog. Read, you will find it.



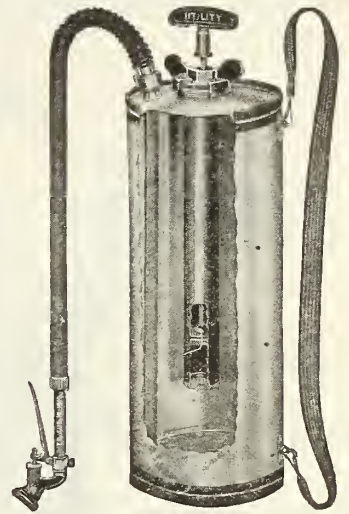
Segment Corn Planter. All large melon growers are now using the Segment Corn Planter.

The only hand mechanical plant setter on the market. No stooping when using it, therefore no lame backs. All kinds of plants—Cabbage, Tobacco, Tomatoes, Cauliflower, Strawberries, Sweet Potatoes, etc., are set in water and covered at one operation. Weight 10 lbs. **Price—Each \$5.50 f. o. b. here.** Ask for circular.

SPRAYERS FOR EVERY PURPOSE

A & M Superior Utility Sprayer

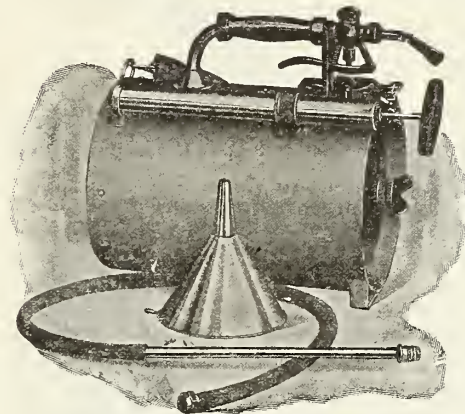
This sprayer is made of heavy galvanized iron or brass, all seams sweated and riveted, tested at 95 lbs.; tank equipped with standard hose connections, capacity 3½ gallons. The pump cylinder is made of heavy brass tubing, with bronze ball check valve contained within a thin brass cage, which does not deteriorate like rubber. The nozzle is made of brass and can be adjusted to be operated at any desired distance by three-eighths inch connecting rod. This sprayer is especially adapted for spraying trees, poultry houses, out-buildings, barns, and vegetables of all kinds. By reason of the ball bearing check valve, any insecticide or acid may be used safely in this pump without danger to the valve. This pump is the dairyman's friend. Packed one in a box, shipping weight 10 lbs. Price: galvanized \$6.75, brass \$9.00.



Utility Sprayer

Lowell Compressed Air Sprayer

Has stood the test fifteen years. The tank is made of heavy steel or brass, holding three gallons. The discharge pipe extends down through the tank to the bottom of the solution. The pump is located on the outside of the tank and the valve does not come in contact with the insecticides or acid used in spraying. This is the all-purpose sprayer. Price, galvanized \$7.25, brass \$10.00. Weight 20 lbs.



Lowell Compressed Air Sprayer

Perfection Compressed Air Pump

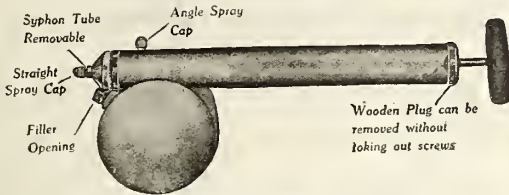
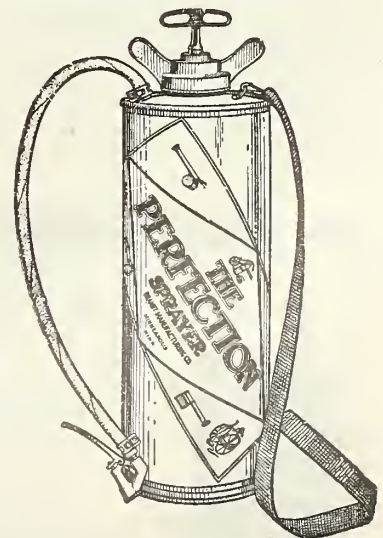
The tanks are made of heavier metal than has ever been used in sprayers of this kind, making the tank practically unbreakable. The pump is 1½-inch seamless brass tubing with a brass valve, and is sealed into the top of the tank with heavy threads following the construction used in the best makes of fire extinguishers.

This Sprayer will handle Whitewash, Water Paints, Bordeaux Mixtures, etc., perfectly.

For whitewash and all heavy mixtures it is necessary to use a "W.W." Cap in nozzle, which is furnished with sprayers. These sprayers are made in galvanized steel or brass as ordered. Weight, 9 pounds empty. All sprayers tested to 60 lbs. before leaving factory. Weight, packed, 14 lbs.

Galvanized Steel...\$7.50
All Brass10.00

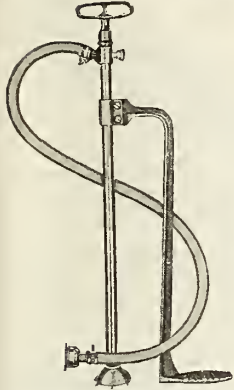
We keep on hand all minor parts. Perfection Nozzle, \$1.50; Disks, 10c; Disk Valve, 25c; Ball, 25c; Top Gasket, 10c; Metal Disk in Pump, 5c.



Continuous Sprayer

Continuous Sprayer

This atomizer is what the name implies, by means of a small air chamber attached there is sufficient pressure to keep the spray continuous while the operator is making the back stroke of the arm, during which time other atomizers are at rest. Galvanized, prepaid \$1.25. Brass, prepaid, \$1.50.



Utility Bucket Pump No. 95, \$6.50

Utility Bucket Pump No. 95

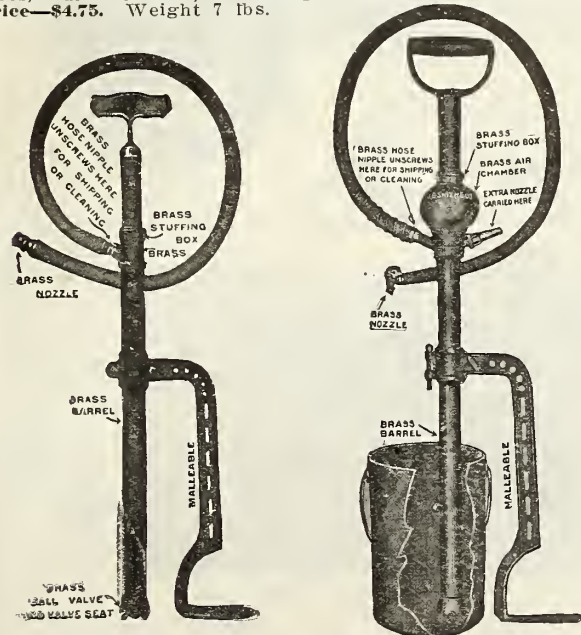
A small powerful double action spray pump. All brass.

Diamond Bucket Spray Pump No. 32

Diamond Spray Pump—A pump that will spray whitewash or any other mixture. Made of solid brass, no leather valves to wear out or be eaten up by the whitewash. Throws a continuous spray and is so simple that a child can take it apart. The Pump shown on this page is almost entirely of the best grade of brass, hence it cannot be affected by the action of the whitewash or of any ordinary spraying solution. It is fitted with a Bordeaux Nozzle. Altogether it is the most durable and serviceable bucket pump made. Price—\$6.75 each. Weight 10 lbs.

Diamond Bucket Spray Pump No. 29

This pump is provided with large double air chamber, enabling the operator to keep a constant pressure on the nozzle of from 50 to 100 pounds with very little exertion. Rapid pumping is not necessary. Used largely for spraying trees, disinfectants, washing wagons, windows, etc. Price—\$4.75. Weight 7 lbs.



No. 29

No. 32

When wanted by Mail, add postage. See inside front cover page.

We have enumerated only a few of the specialties we carry. We have always on hand a full line of garden tools of every description, and for every conceivable purpose. Ask for anything you may want in this line. We have it.

Utility No. 40 Portable Outfit

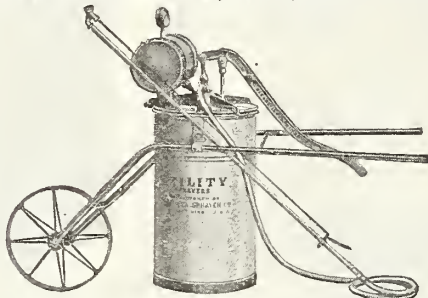
Very useful for painting, whitewashing, and disinfecting warehouses, factories, barns, trees and greenhouses.

TANK larger than most similar outfits, made of heavy galvanized iron, reinforced at top and bottom with heavy band iron rings. Constructed the same as our No. 50 Barrel pump as shown on this page. Mechanical agitator keeps liquids thoroughly mixed. Outfit equipped with our patented Utility Angle Nozzle, which controls spray at discharge end regardless of what length pole is used. A fine strainer at suction end prevents sediment getting into working parts of pump.

FRAME substantially built of steel, well braced and balanced.

Equipment—Capacity, 18 gallons; 10 feet $\frac{1}{2}$ inch 5-ply spray hose, 4-foot spray rod; 1 patented Utility Angle Nozzle No. 65. Shipping weight complete, crated 85 pounds.

No. 40—Portable Outfit. Price, each \$32.00.



UTILITY NO. 40A PORTABLE OUTFIT

Same in construction as our No. 40, but equipped with an air pressure tank mounted on pump casting. This makes a one man outfit. By obtaining 250 pounds pressure considerable spraying can be done without pumping.

Equipment same as with No. 40.

Shipping weight, complete, crated, 100 pounds.

No. 40A—Portable Outfit. Price, each \$42.00.

The No. 25 "Yankee" Barrel Spray Pump

Made With Brass Nozzles, Brass Cylinder, Brass Ball Valves and Valve Seats

Quickly Attached to Any Barrel

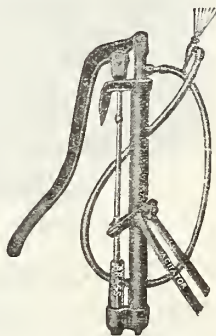
The No. 25 "Yankee" double acting barrel spray pump for use with a barrel spraying outfit. All parts are submerged in the liquid, and therefore no priming is necessary.

The suction barrel is made of heavy brass, and all valves and valve seats are made of the best brass, ground together so that all parts are absolutely air tight. These parts will not corrode or rust out, nor is any part of the pump affected by the strong mixtures.

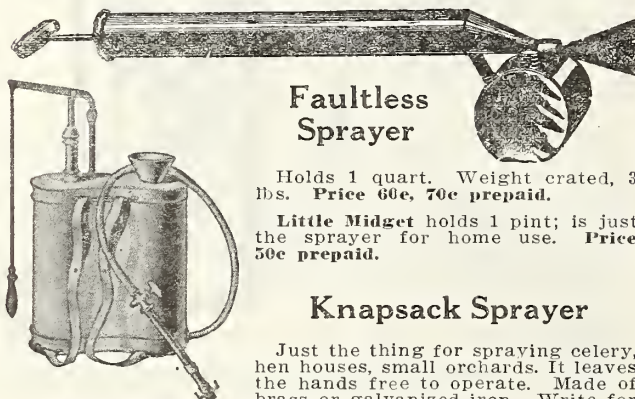
The duplex agitator keeps the liquid stirred up and prevents the ingredients from settling to the bottom. The pump is regularly fitted with 5 feet of $\frac{1}{2}$ -inch 3-ply rubber hose of A-1 quality, and Vermorel brass Nozzle, from which any size spray or stream can be thrown. It is impossible to clog this nozzle, and it cannot get out of order.

Only very slow and easy pumping is necessary. The "Yankee" is used extensively for all spraying purposes, especially for orchards, vineyards, shrubbery, and for whitewashing hen houses, stables, fences, etc.

Price, complete, without barrel, \$14.00. Wt. 42 lbs.



Spray Pump Complete



Knapsack Sprayer

Faultless Sprayer

Holds 1 quart. Weight crated, 3 lbs. Price 60c, 70c prepaid.

Little Midget holds 1 pint; is just the sprayer for home use. Price 50c prepaid.

Knapsack Sprayer

Just the thing for spraying celery, hen houses, small orchards. It leaves the hands free to operate. Made of brass or galvanized iron. Write for further description and price.

THE WENATCHEE Fruit and Vegetable Gathering Bag Used Everywhere

REASON IT IS SO POPULAR

It is durable and practical.

Saves in labor a dollar a day over cost by any other method. The load is carried from the shoulders by heavy halter web that will not curl, and in this position gives ease and comfort to the picker. A strap around the waist keeps it in position. The mouth of the bag is always open, being constructed with a novel shaped metal frame so that the hands of the picker can go with the fruit to the bottom of the bag. Bottom of the bag is opened instantly by the snap and fruit is emptied out without bruise or injury.

When snapped at top loop the bag will hold one-half bushel; when snapped at bottom loop as shown in cut the bag will hold about a bushel.

Body of bag is made of 10 ounce canvas double stitched with waxed harness thread and reinforced with leather riveted at wearing parts.

Will last for years. Can't be beat for planting and gathering potatoes. Shipping weight 2 lbs. Price \$3.00 postpaid.

Utility Barrel Pumps

Recommended for heavy duty spraying.

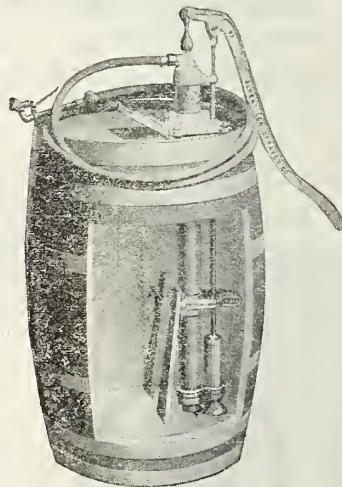
Cylinder is made of heavy brass $2\frac{1}{4}$ inches in diameter. Brass plunger can be adjusted without removing, having special treated cotton wick packing to prevent corrosion by chemicals. All working parts that come in contact with liquids are brass. Bronze ball valves easily removed. Pressure of 150 to 200 pounds can be maintained.

In complete outfits we furnish our patented Utility adjustable nozzle which always gives control of spray at nozzle end. A fine strainer avoids sediments getting into working parts.

No. 50A—Shipping weight, crated, 50 lbs.

Utility No. 50A—Complete as shown in cut. Price, each \$25.00.

Utility No. 90A—\$16.00.



Wagon Spray Boom



Wagon Spray Boom

This boom can be used with any good barrel pump, but gives the best satisfaction in connection with our No. 25 or No. 40. It is light, strong and adjustable to every position. Will throw spray at any angle and can be folded so that you can drive thru

narrow gates and can be set to spray between rows of grape vines, etc., two nozzles spraying to the right and two to the left. One barrel of liquid will cover three acres. A ten year old boy can operate it. The cheapest and best method of spraying a field of potatoes, celery, etc.

INSECTICIDES See Pages 9 and 64.

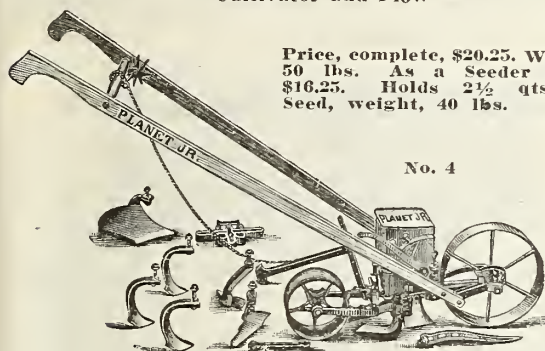
The ever increasing inroads of insects and disease has rendered it necessary to get adequate sprayers to meet this necessity. Call and see our assortment; it is complete.

PLANT JR. GARDEN TOOLS

Hand Cultivators and Seeders have become a garden necessity. One man with a hand cultivator can do the work of six men with the hoe, and do it easier. All are good, but some are more adaptable for all purposes.

Space will not permit a detailed description of all the garden tools we offer, but a short reference to each will suffice to let you know what we have, and if interested, please write for special circular or detailed description of what you want.

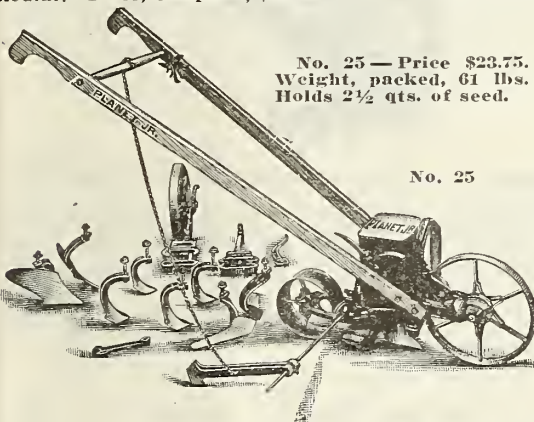
No. 4, Planet Jr. Combined Hill and Drill Seeder, Wheel Hoe, Cultivator and Plow



Price, complete, \$20.25. Weight 50 lbs. As a Seeder only, \$16.25. Holds $2\frac{1}{2}$ qts. of seed, weight, 40 lbs.

No. 4

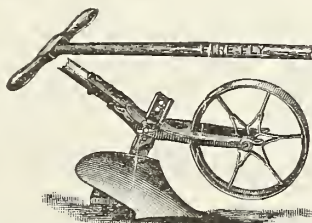
This tool combines in a single convenient implement, a capital hill-dropping seeder, a continuous row seeder, an admirable single wheel hoe, an excellent furrower, a splendid wheel cultivator and a rapid and efficient wheel garden plow. As a Seeder the No. 4 is accurate, simple, durable, reliable and easy running, doing first-class work in every particular. Price, complete, \$20.25.



No. 25 — Price \$23.75. Weight, packed, 61 lbs. Holds $2\frac{1}{2}$ qts. of seed.

No. 25

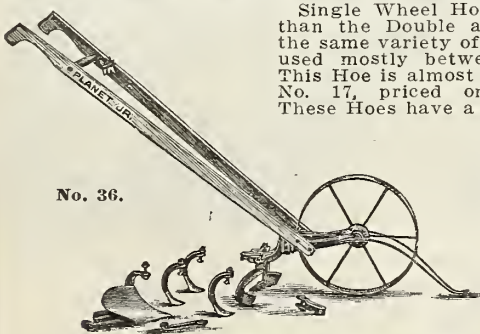
Planet Jr. No. 25—Combined Hill and Drill Seeder and Double Wheel Hoe and Cultivator and Plow. Price, \$23.75. Weight, packed, 61 lbs.



Planet Jr. Fire Fly—1 plow only. Price, \$4.75. Weight, packed, 30 lbs.

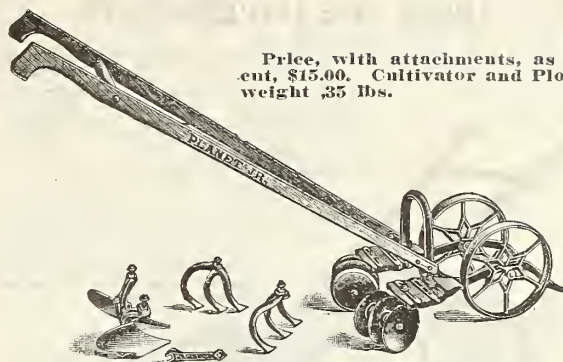
No. 36 Planet Jr. Single Wheel Hoe, Cultivator and Plow.

Single Wheel Hoes are lighter than the Double and do almost the same variety of work, but are used mostly between the rows. This Hoe is almost identical with No. 17, priced on next page. These Hoes have a variety of attachments which adapts them to any variety of garden culture.



No. 36.

No. 36, Price \$12.00. Wt. 30 lbs.



Price, with attachments, as in cut, \$15.00. Cultivator and Plow, weight 35 lbs.

No. 14 Planet Jr. Double Wheel Disc Hoe

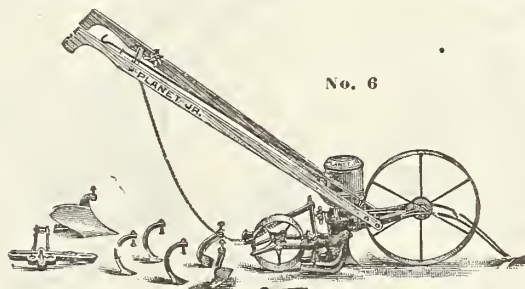
This new tool will give excellent satisfaction; is especially pleasing to all who work peat lands. There are three oil tempered discs on each side.

The set of prong cultivator teeth are constructed on entirely new lines, and will be found invaluable in general cultivation.

The plows are the regular Planet Jr. model and are continually valuable for furrowing, covering and plowing.

Price, complete, \$15.00.

No. 6 Planet Jr. Combined Hill and Drill Seeder, Wheel Hoe, Cultivator and Plow. Price, complete, \$26.75. Weight, packed, 63 lbs. As a Seeder only, \$23.25.



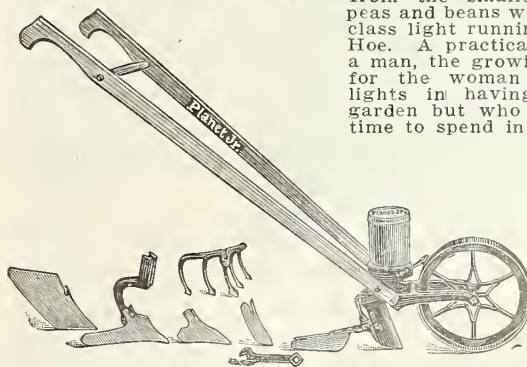
No. 6

This is our latest Combined Hill and Drill Seeder and Wheel Hoe, and after three years' gratifying use in the field, every detail has been perfected.

What It Will Do.—It drops all garden seeds in hills and sows in drills, with the greatest regularity, in a narrow line, to any exact depth required, covers, rolls down and marks the next row, all at one passage. As a wheel hoe, it hoes, cultivates and plows all garden crops, completing a row at every passage, up to 16 inches in width.

Planet Junior No. 31

The No. 31 is a New Planet Jr. Combined Seeder and Wheel Hoe designed for small gardeners. It combines a thoroughly reliable Seeder that will sow all garden seeds from the smallest up to peas and beans with a first-class light running Wheel-Hoe. A practical tool for a man, the growing boy or for the woman who delights in having a good garden but who has little time to spend in it.



Price, complete, (No. 31).....\$13.75
As a Seeder only (No. 32)..... 11.25
As a Wheel Hoe only (No. 33)..... 7.50

No. 20

Planet Jr. Fertilizer, Pea and Bean Seeder

Price Complete, \$35.50. Packed weight, complete, 83 lbs.

IRON AGE IMPLEMENTS

The Iron Age Cultivators and Drills have been on the market for twenty years. They are made of the best material, well put together, and rightly designed for everyday use. The wheels are larger than other hand tools, making them easier to run. The Seed Drills may be changed to a Single or Double Wheeled Hoe very quickly.

No. 6—Combined in this tool are three distinct and thoroughly practical implements, a Hill and Drill Seeder, a Double Wheel Hoe and a Single Wheel Hoe. As a Hill and Drill Seeder, packed weight, 57 pounds. Price \$20.00.

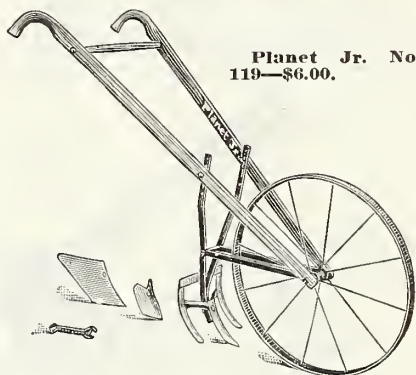


No. 6

Planet Jr. No. 119

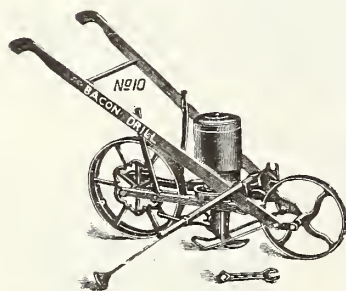
To meet the demand for a high wheel hand cultivator we offer the Planet Jr. fully equipped as shown in the picture. Wt. packed, 20 lbs.

Price \$6.00.



Planet Jr. No. 119—\$6.00.

The Bacon Hand Drill



Bacon Hand Drill

We have been handling the Bacon Drills since 1899, and the many customers who are using them are unanimous in praise of their durability and accuracy. All who have used this drill claim it is the most durable of all, absolutely reliable to sow evenly from one end of the row to the other. Has angle steel frame with Hill Dropper, Agitator and Front Wheel Extensions of Malleable iron, giving strength with lightness.

The Hill Dropper will deposit seeds in hills, 9, 12, 18 or 36 inches apart.

The feed, while simple, handles a very large variety of seed, getting an even distribution that is unequalled, and very noticeable in sowing Salsify, Parsnip, Prickly Spinach, Peas, Beet, etc., getting an even row with light seeding.

The feed will also handle Phosphates, which can be sown before or after seeding.

The Drills have a Shoe Opener, which deposits seed in a narrow line, allowing close cultivation, saving hand labor.

No. 10—Hill and Drill Seeders, \$12.50.

EXTRA PARTS FOR PLANET JR. TOOLS

We carry a full line of extras. When in need of any, write us, describing the part wanted as accurately as you can, giving the number of the casting, or send a picture or pencil drawing.

GARDEN TOOLS FOR EVERY PURPOSE

Our line of tools is very complete. It is hardly possible you could wish for anything we do not have. We have added some low priced drills and cultivators, not because they are inferior, but they are built for the small gardener who has little use for a drill, but cannot get along without one.

THE COLUMBIA MACHINES

Write for Circular

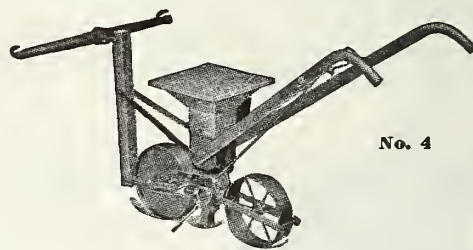
The Greatest Seeding Machines in the World

They sow any kind of seed, large or small. They are all A POSITIVE FORCED FEED. Every seed is carried to the ground and covered; not a seed can escape, and not a seed can pass through the machine nor escape to the ground until the machine is in gear and moves forward and is ready to do its work; nor can a seed be shaken out or get to the ground when the machine is out of gear. A very important advantage possessed by no other planter. They are the simplest of all planting machines; the most certain and most complete planters in the world. WONDERFUL LITTLE MACHINES; plant all kinds of seeds, from the smallest to the largest.

The Columbia Hand Planter No. 10

You can plant from one inch apart to ninety-six inches apart by the simple manipulation of the disk wheel and the cylinders. With this drill you can sow any seed in any quantity any distance apart up to eight feet. It will sow your pepper, tomato, and any other crops in the field that now must be done by transplanting. It is a universal planter because there is nothing in the seed line from the size of lima beans to turnip seed that it will not plant. With special apparatus it will plant shelled peanuts without crushing the seed. For hand planter, Price \$20.00. Weight 85 pounds.

Columbia Hand Planter No. 11—Same as No. 10 with the addition of the Fertilizer Attachment Price \$25.00.



No. 4

COLUMBIA PLANTER WITH HORSE ATTACHMENT

Just the seeder for large gardeners. It does the work as perfectly and as economically as the hand planter. It is heavier than the hand planter, and fitted with a single-tree attachment and extra large adjustable hopper. Weight packed for shipment 100 pounds. Price, complete, \$30.00 f. o. b. here.

We aim to have on hand cylinders for every kind of seed. When ordering special cylinders, consult your circular, that you may get the one you need.

NOTICE! NOTICE! NOTICE!

We aim to list in this catalog our leaders in every line, too numerous to mention. Therefore we request that should you desire anything pertaining to agriculture write us about it. If we do not have it, we will be accommodating and get it for you. Consider us your friend and make use of us.

We have aimed to make of this catalog a reliable guide for farmers and gardeners. Therefore every picture is from an actual photograph and every description is without exaggeration.

READ

In these times when intensive farming is so necessary to avoid the actual famine that will surely follow if we cannot wisely avert it, we must employ every agency possible to make up for the shortage of labor and to promote the greatest production from individual effort on the least area of ground. Therefore, select wisely the machinery and tools suitable to the task you have at hand. The man with as little as twenty acres will find it profitable to own a tractor, that it is more economical than to do all the work with a horse. But, the horse is as necessary as the plow and harrow on any plot above one acre. It is the one to five-acre gardener who must select wisely the one-man tools that will give him the highest efficiency, and each person must select for themselves the tools for their particular specialization; but there are certain tools which every gardener must have, and we here call attention to certain makes which we recommend as essential to efficiency:

Spading Fork, Long Handle.
Best Steel Rake.
Five-tine Norcross Cultivator.
Sprinkling Can.
Planet Jr. No. 119.

Pointed Shovel, Long Handle.
Best Steel 7-in. Hoe.
Best Steel Trowel.
Garden Hose and Nozzle.

POULTRY SUPPLY DEPARTMENT

Mr. Church has a record of twenty-five years continuous service as a specialist in **Poultry Food, Supplies and Remedies**. Twelve years of this time he has been in charge of our Poultry Supply Department, and many new remedies and ideas beneficial to poultrymen have been advanced by him.

JUBILEE INCUBATORS AND BROODERS



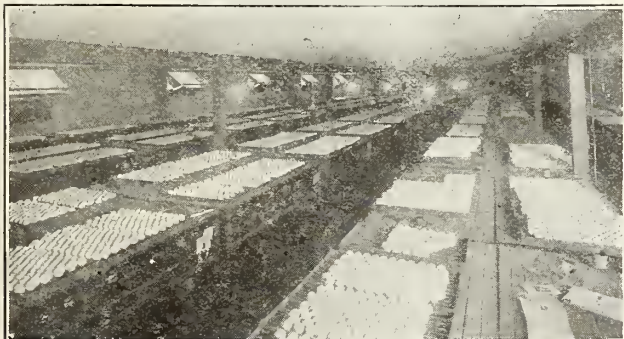
Jubilee Incubator

The Jubilee Regulator is the most simple, the most sensitive and the most durable of any regulator in existence. It will not stick, as there are no joints to catch; plays perfectly free, and when the heat of the egg chamber reaches the degree to which it is regulated the expansion of the regulator causes a balance valve to raise off the escape flue. This allows the heat direct escapement, the circulation is retarded, and the radiation of the heat in the egg chamber is decreased—all this allows just sufficient heat radiated from the pipes to keep the temperature of the egg chamber to the desired degree.

The Jubilee system of applying moisture is the most perfect ever devised. The boiler chamber is provided with a special moisture pan, which derives its heat from the Jubilee boiler which the boiler chamber encloses. By means of a feed cap and a draw-off, or in five minutes' time increase the moisture to saturation, and more important still, all this is accomplished without opening the door of the egg chamber or exposing the eggs.

Capacity	Weight	Dimensions	Price
108-egg Jubilee	110 lbs.	2 ft. 8 in. x 3 ft.	\$36.00
216-egg Jubilee	150 lbs.	3 ft. 8 in. x 3 ft. 3 in.	47.00
324-egg Jubilee	200 lbs.	3 ft. 8 in. x 5 ft. 3 in.	60.00
504-egg Jubilee	260 lbs.	3 ft. 2 in. x 7 ft. 2 in.	77.00

On account of advancing prices on all Galvanized steel goods and materials, prices are subject to change without notice.

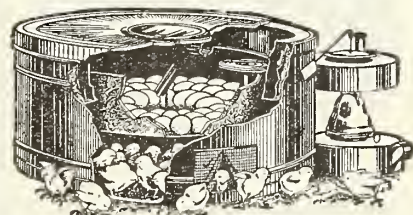


The above cut shows (33) thirty three 504-egg Jubilee Incubators in one plant. The largest hatcheries are using Jubilee Incubators because they are the business machine. You make no mistake in buying this machine.

SIMPLICITY COMBINED HATCHER AND BROODER

WONDERFUL CIRCULAR HOT WATER HEATER
HEAT—602 SQUARE INCHES OF HEATING SURFACE

The Simplicity Incubator positively can't have cold-corners or cold-side-walls! It's impossible! The side walls themselves are **actually heated**! The patented circular copper hot water radiator—**entirely surrounds** the egg chamber! Heats from side to center! And a shield stands between it and the eggs to protect them from **direct heat**! Thus the heat passes over this shield—and you get "**down heat**" on every egg. It's the mother hen principle! Means **equal heat** to every egg! Means **EVERY** egg has an equal chance! Besides, see how this provides enormous **excess** heating capacity for the egg compartment! Note that it has 602 square inches of heating surface—even in the 100-egg model! What does this mean? Big oil saving! Certain heat! Ample heat! Sure heat! Now—last but not least—**hot water heat** is certainly better than **hot air heat**! You'll agree with me, of course! Hot air heat is erratic heat—unequal heat! Hot water heat is **steady heat**—dependable heat! Open up your Simplicity Incubator to air the eggs. Leave egg chamber **wide open**! Note that water remains hot—and temperature jumps back to 103 quick—when lid is replaced!



Simplicity Incubators
"HAVE NO COLD CORNERS"

The heating system is unique and gives the best circulation of warm air and uniformity of temperature in the machine. The Combined Hatcher and Brooder feature makes the Simplicity the best Incubator proposition ever offered at the price.

The body of the machine is made of the very best galvanized steel. The heater and tank are made of galvanized iron or also of copper.

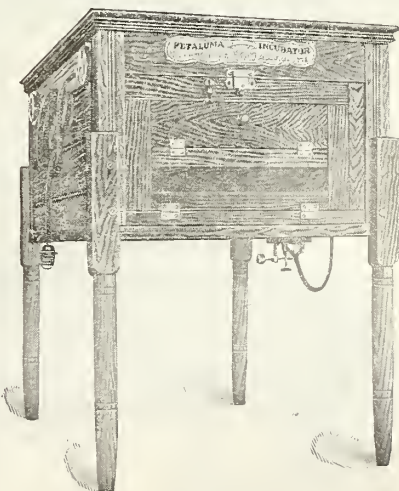
Model A-50 The 50-Egg Size, is 17 inches in diameter; 10 inches high; shipping weight 25 lbs. **Price \$19.00.**

Model A-100 The 100-Egg Size, is 22 inches in diameter; 10 inches high; shipping weight 35 lbs. **Price \$25.00.**

Model A-150 The 150-Egg Size, is 25 inches in diameter; 10 inches high; shipping weight 45 lbs. **Price \$30.00.**

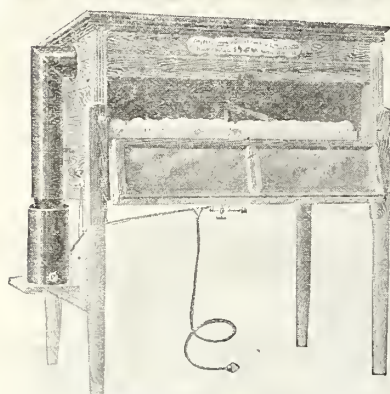
PETALUMA ELECTRIC INCUBATOR

In keeping with our advanced ideas in the field or artificial incubation we were the first to introduce a real practical electric incubator. One that does not require an electrician to operate it. One that is simple enough for any person to understand. One that is unique in construction, safe, reliable, and using but a small amount of current. One that controls the heat perfectly and will not get out of order. One of very few parts and very simple mechanism, and will hatch any thing that can be hatched.



80-E—126 eggs. Weight 70 lbs. Price.....\$29.50
81-E—252 eggs Weight 100 lbs. Price..... 38.50
83-E—504 eggs. Weight 175 lbs. Price..... 67.00

DO IT ELECTRICALLY—THE PETALUMA ADAPTER



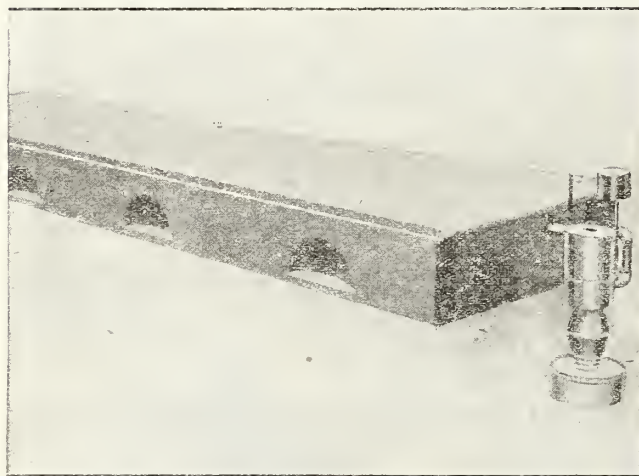
This Cut Shows the "Adapter"

Those who have already different makes of machines in operation can have them changed at little cost, or our "ADAPTER" makes it possible to heat any style or make of Incubator, whether Hot Air or Hot Water by simply adjusting it under the heater of the Incubator instead of the Coal Oil Lamp. Hundreds of Incubators are thus being changed, which relieves the operator of all the trouble in filling Lamps and of course removes all the danger that accompanies the use of Coal Oil, Gasoline, or any of the burning fluids. It is impossible for any person no matter how careless or indifferent, to cause fire to occur in either Incubator or Brooder House with our Electric Apparatus, besides the saving in time is a great consideration. No Lamps to fill. No odors in the house. Bigger and better chicks, are some of the advantages.

Prices of the ADAPTER for the following machines, viz.:
 126 Egg Incubator.....\$17.00
 252 Egg Incubator.....17.00
 504 Egg Incubator.....19.00

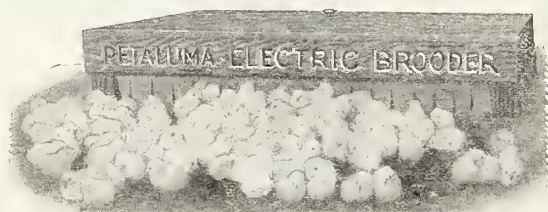
Write for circular with full descriptions.

JUBILEE INDOOR BROODERS



Capacity	Weight	Dimensions	Price
4-section—200 chicks	170 lbs.	2 ft. 6 in. x 10 ft.	\$32.00
3-section—150 chicks	135 lbs.	2 ft. 6 in. x 7 ft.	27.00
2-section—100 chicks	100 lbs.	2 ft. 6 in. x 5 ft.	21.00

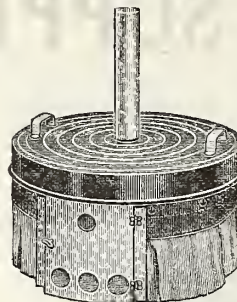
PETALUMA ELECTRIC BROODERS



100E—100 Chicks, weight 40 lbs.	\$13.00
250E—250 Chicks, weight 80 lbs.	17.00
500E—500 Chicks, weight 122 lbs.	29.00

Send for catalog on Electric Incubators and Brooders.
 F. o. b. Los Angeles.

ECONOMY HOVER CONSTRUCTION



Economy Hover

In construction the Economy Brooder Hover is very simple, as shown by the cuts. It is made of steel throughout, and all parts are seamed or welded together, strong and durable.
 It is compact, light and all in one piece, so that it can be conveniently lifted by the two handles and moved from one place to another without disturbing the lamp.

Safety, Convenience and Economy

The lamp, slide and lamp box form a very convenient combination; and one which is doubly safe as the lamp has an O. K. Safety Burner, and the lamp box is fireproof.

The Economy Hover can be used anywhere with perfect safety and ONLY A VERY SMALL FLAME is required to keep up the temperature, as the lamp is inside, and no heat is lost. The lamp is held securely in the lamp slide and the slide is an accurate fit in the lamp box, so that no adjustment of the lamp is necessary—simply push the slide in as far as it will go.

The No. 1 Economy Hover has a heating drum 18 inches in diameter. Weight 13 lbs. Price \$8.50.

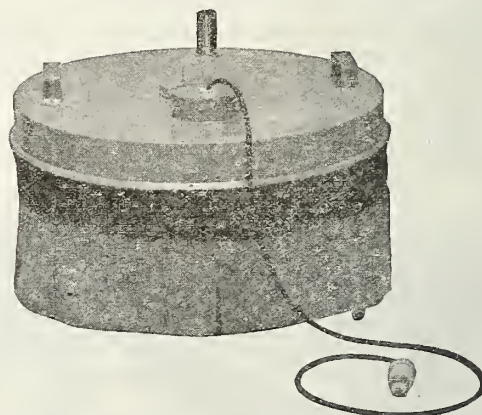
No. 2 Hover has a 22-inch drum. Weight 24 lbs. Price \$11.00.

INTERNATIONAL SANITARY HOVER

The International Sanitary Hovers have stood every climatic test from Panama to Quebec. Practical poultrymen, state experiment stations, and poultry judges endorse it. You can raise chicks anywhere with International Sanitary Hovers. No specially constructed houses are necessary. There is no better place than in your regular hen houses. Sanitary Hovers are as practical for small back-yard poultry raisers as large poultry farms. They are warmest at the curtain—usable anywhere—ready for business wherever placed. No crowding or smothering of chicks; no kneeling in mud to get at the lamp; no cutting of holes or building of platforms. You want the best brooding device—you will get it in the Sanitary Hovers. Weight, packed, 30 lbs. Price \$14.00.



THE OAKS ELECTRIC HOVER



The Oaks Electric Hover is made on the same general principles and of the same high grade material as the Oaks Electric Incubator and has a very sensitive and accurate regulator equipped with platinum contact points. It is 22 inches in diameter and has a heavy double curtain attached with large eyelets and hooks.

The Oaks Electric Hover will give you the best results with the least possible care and trouble.

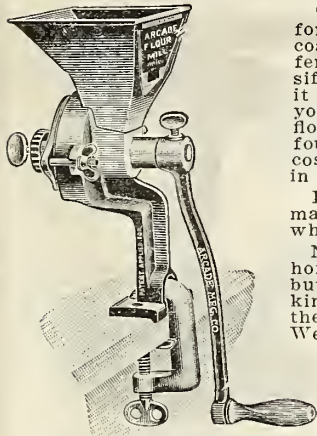
The Hover is also made in the 32 voltage and 110 voltage.

Hover without cage.....\$15.00

Shipping weight, about 30 lbs.

Prices do not include postage, express or freight.

GRINDING MILLS



Arcade Flour Mill

ENTERPRISE BONE AND GRAIN MILL

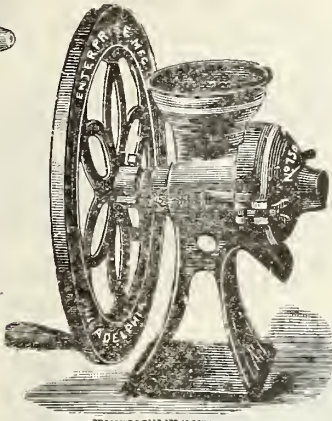
One of the essential tools for poultry men. Can be used for cracking grain, bone, shell or grit.

The Burrs are made from cold chilled steel of the best quality. This mill has for many years been the standard machine of the market, on account of its fine workmanship and durability. If you want a mill that will last and do your work get the Enterprise. Weight with crate, 75 lbs. Price, \$17.00.

The Arcade is easy to adjust for grinding all sizes from very coarse to very fine. If you prefer, the ground grain can be sifted to remove the hulls. Also it saves money for you. When you figure it out, home ground flour or meal costs about one-fourth what the mill product costs. The Arcade pays for itself in a few weeks.

Food experts agree that flour made from whole grains is more wholesome and digestible.

Now, there are other so-called home flour mills on the market, but they do not grind the same kind of old-fashioned flour that the Arcade does. Price \$4.50. Weight 10 lbs.

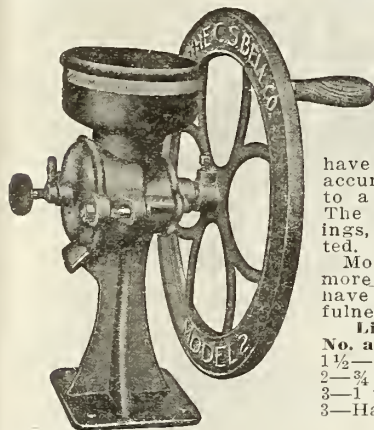
Enterprise
MODEL HAND
GRINDER

The original family grist mill,—not a cheap imitation. Model Mills have more than one outright copy but are far superior. Model Mills have harder burrs which run accurately, they are painted to a high finish, not dipped. The parts are smooth castings, carefully ground and fitted.

Model Mills last longer, do more and better grinding and have a broader range of usefulness.

List of Sizes We Carry

No. and Capacity	Wt. Price
1½—½ to 1 bu. per hr.	20 \$4.00
2—¾ to 2½ bu. per hr.	35 6.50
3—1 to 3 bu. per hr.	63 8.50
3—Hand Grinder	8.50



Model Grinder

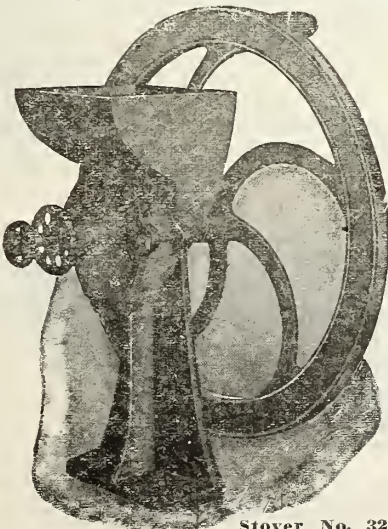
Stover—This machine grinds oats, peas, dry bone, shells, etc., for feeding to poultry.

No. 32—16-inch fly wheel. Capacity 2 bu. per hour. Weight 40 lbs. Price, \$7.50.

No. 33—18-inch fly wheel. Weight 45 lbs. Price, \$8.00.

No. 35A—Equipped with pulley only for operation by ½ to 2 horse power. Weight 50 lbs. Price, \$11.00.

No. 35B—Fitted with combination fly wheel and pulley. For hand or power. Weight 60 lbs. Price \$12.00.



Stover No. 32

BONE CUTTERS

MANN'S NO. 7

The New No. 7 is mounted on a strong iron stand and has patent automatic governing spring feed. Large, open-hinged cylinder, giving instant access to all working parts, has six knives, gear guard, anti-clog device, heavy balance wheel and other improvements. (See cut.)

Price List of Mann's Bone Cutters.

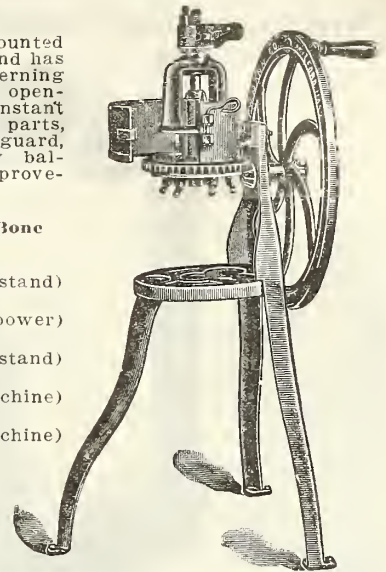
No. 7 (B. W. and iron stand)
Price \$23.50, wt. 107.

No. 7½ (hand or power)
Price \$33.00, wt. 150.

No. 9 (B. W. and iron stand)
Price \$35.00, wt. 163.

No. 11 (power machine)
Price \$48.50, wt. 215.

No. 12 (Power machine)
Price \$63.00, wt. 260.

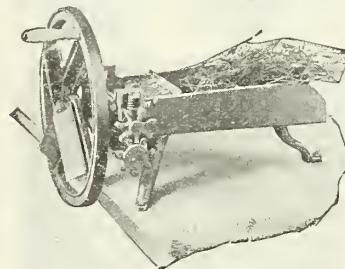


Model No. 7—Price, \$23.50

CLOVER CUTTERS

MANN'S CLOVER CUTTER

Made entirely of iron and steel. It cuts any kind of hay or clover, either dry or green. Each revolution of the balance-wheel produces 12 cuts. Price, With Stand.....\$21.70 Without Stand.....\$18.70



The Gem Clover Cutter

GEM CLOVER CUTTER

This machine is built of steel and iron throughout, and absolutely the best cutter for small poultrymen, cutting in lengths of ¼ inch.

With stand, \$18.00; wt. 78 lbs.

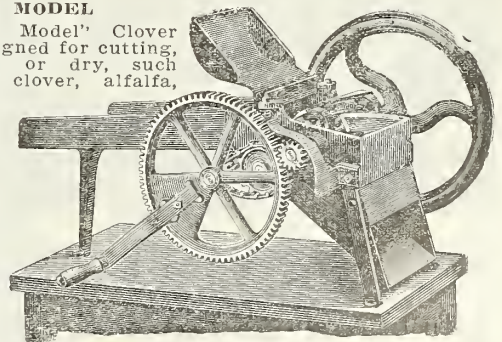
Without Stand, \$16.50; wt. 60 lbs.

NEW MODEL

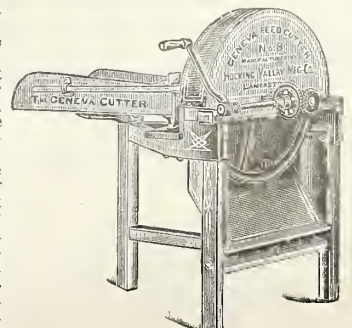
The "New Model" Clover Cutter is designed for cutting, either green or dry, such growths as clover, alfalfa, vegetable tops, etc., into eighth-inch lengths.

Made only in one size. Knives can be adjusted and easily sharpened.

Price \$17.50.

GENEVA FEED CUTTER
NO. 6

This size has two nine inch knives and is intended for hand use only, but can be fitted for power also. It has ample size and capacity to accommodate any ranch from 1000 to 10,000 hens. It will cut ½-inch to 1½-inch. The change is very simple and easily made. It is extremely light running and will cut any kind of feed. In material and beauty of finish it is all the most critical could ask. Price—\$35.00, f. o. b. Los Angeles. Wt. 200 lbs. No. 8, Price, \$45.00. Wt. 240 lbs.



INCUBATOR AND BROODER SUPPLIES

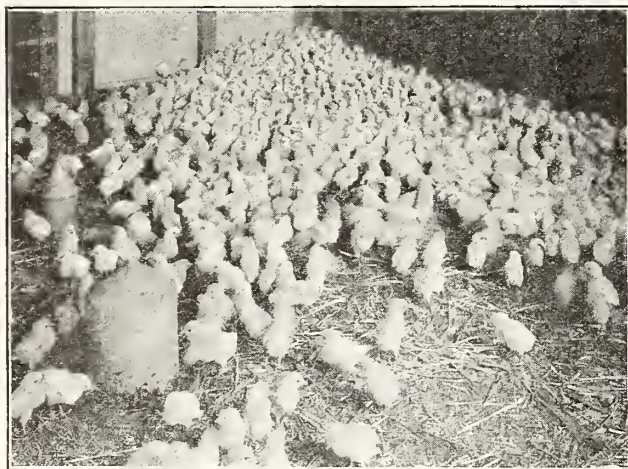
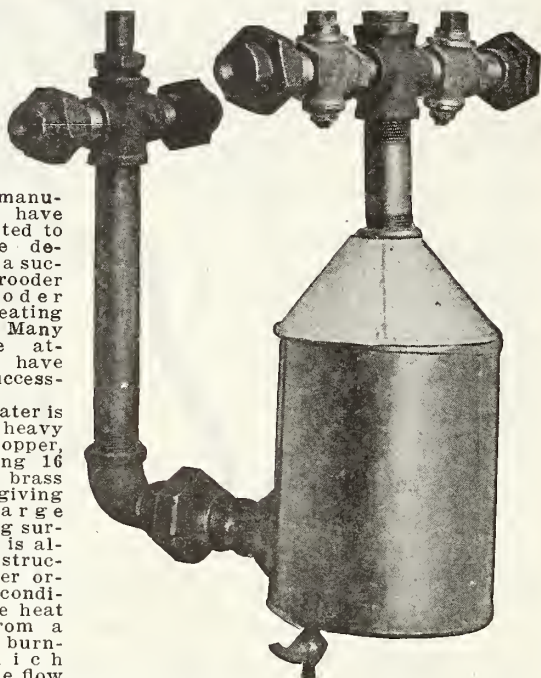
THE LOS ANGELES BROODER HEATER

Many manufacturers have attempted to meet the demand for a successful brooder and brooder house heating system. Many of these attempts have been unsuccessful.

The Heater is made of heavy rolled copper, including 16 half-inch brass tubes, giving very large heating surface, and is almost indestructible under ordinary conditions. The heat comes from a gasoline burner, which checks the flow of gasoline at once in case of fire.

The regular size is.....\$23.00
Oblong Boiler.....29.00

Including Two Burners



This cut shows 2000 baby chicks brooded by a Los Angeles Brooder Heater. This Heater has a capacity of 1000 to 3000 chicks.

INCUBATOR AND BROODER SUPPLIES

Lamp Founts for Incubators, No. 1, 50c ea.
Lamp Founts for Incubators, No. 2, 70c ea.
Lamp Founts for Incubators, No. 3, 85c ea.
Lamp Chimneys for all sizes, 25c each.
Burners, for Incubators, Sun-hinged, No. 2, 50c each.
Burners, for Incubators, Sun-hinged, No. 3, 85c each.
Lamp Wicks, all sizes, 35c per dozen.
Egg Testers, tin, 35c each.

JUBILEE INCUBATOR AND BROODER SUPPLY LIST

Incubator or Brooder Lamp, by express, complete with No. 2 Sun-Hinge Burner.....	\$1.85
Incubator or Brooder Lamp, by express, complete with No. 3 Sun-Hinge Burner.....	2.25
Tested Jubilee Thermometer, postpaid.....	.85
Jubilee Egg Tester, postpaid.....	.35
No. 3 Sun-Hinge Burner, postpaid.....	.85
No. 2 Sun-Hinge Burner, postpaid.....	.75

The Monitor Gas Burner

This cut shows the new Monitor Gas Burner used to heat our Los Angeles Brooder Heaters where gas can be obtained. This burner has the heating capacity of heating 100 feet of Brooder space. It is economical and safe, and a burner that will not corrode, as it is so constructed to give easy flow of gas. It is said by all large poultry breeders to be the best gas burner on the market. Price \$1.50.



Jubilee Hot-Water Brooder Heater

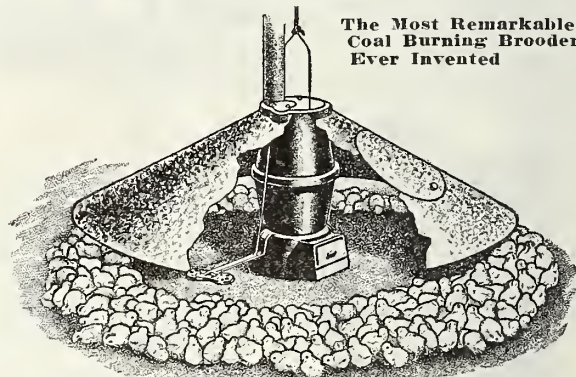
We sell the Jubilee Brooder Heaters for the In-Door Brooders separate from the brooder cases, in order that customers living at a distance, where the freight rates are high, may not be debarred from using the Jubilee Brooders. The heaters are sold to those parties who have already purchased an In-Door Brooder complete, to serve as a model in constructing the cases to which the heaters are to be fitted. It is important that a model be at hand, or the heaters will not be set rightly and dissatisfaction will result.

Brooder Heaters

For 2-section In-Door Brooder Heater	\$13.00
For 3-section In-Door Brooder Heater	14.00
For 4-section In-Door Brooder Heater	15.00

Monitor Gas Burner

THE BUCKEYE STANDARD COLONY BROODER



The Most Remarkable Coal Burning Brooder Ever Invented

Showing a Standard Colony Brooder in Operation with 1,050 Chicks

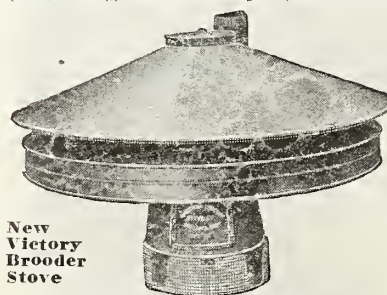
Self-feeding, self-regulating, simple, safe, everlasting. Saves labor, time and money. Makes three chicks grow where one grew before. Cuts the cost of equipment to less than half. Cuts the cost of operation to less than half. Reduces the time and labor to less than a fourth. Guaranteed to raise more chicks and better chicks. Price f.o.b. Los Angeles

No. 18—Capacity 500 chicks. Weight 74 lbs.	Price \$25.00
No. 19—Capacity 1000 chicks. Weight 94 lbs.	Price \$30.00

F. O. B. Los Angeles

AMERICAN BROODER STOVE

The Improved Petaluma Brooder Stove, with a Wire Around Legs, is Adapted for 250 to 1500 Chicks at One Time. It Burns as Fuel, Engine Distillate, Kerosene (Coal Oil), and Oil Tops (Stove Distillate).



New Victory Brooder Stove

OPERATING COST

The operating cost of a Brooder Stove is a mere trifle, when compared with the grand results obtained. The fact that a far greater percentage of chicks are brought to maturity, and with stronger vitality, should be satisfying. Price \$39.00 F. O. B. Los Angeles.

THE NEW VICTORY BROODER STOVE With Wire Around Legs, is Adapted for

250 to 1500 Chicks at One Time. It Will Burn as Fuel, Engine Distillate, Kerosene (Coal Oil), and Oil Tops (Stove Distillate). Price \$43.00 F. O. B. Los Angeles. Send for Descriptive Catalog

SINGLE AND DOUBLE CHICK FEEDERS

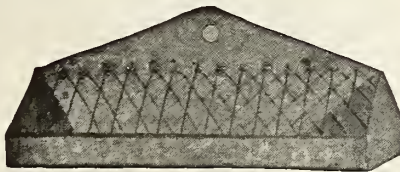
Any of the following articles ordered by Parcel Post add postage.

DOUBLE FEEDERS

12 in. 50c, wt. 1 lb.
18 in. 65c, wt. 1½ lb.
24 in. 75c, wt. 2 lbs.
30 in. 90c, wt. 2½ lb.

SINGLE FEEDERS

12 in. 35c, wt. 1 lb.
18 in. 45c, wt. 2½ lb.
24 in. 65c, wt. 2 lbs.
30 in. 90c, wt. 2½ lb.
F.O.B. Los Angeles

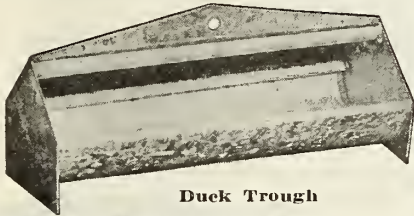


Double Chick Feeder



Single Chick Feeder

DUCK TROUGHS



Duck Trough

Ms.; 20 inch 60c, weight 3 lbs., f. o. b. Los Angeles.

The bottom of the trough being round in shape, makes it superior to all others, as it can be easily cleaned and prevents food from becoming stale in corners. The grate slide is a feature not to be found in any other feed trough. Price 10 in. 40c, weight 2

ROUND BOTTOM GRIT AND SHELL BOX

This box is made of Best Galvanized iron. Made with three compartments for charcoal, grit and shell. It is so constructed that there will be no clog in the feed and it is always ready for use. Has a good cover so rain cannot get into either compartment. This is one of the essential things in every poultry yard. You should not be without grit, charcoal or shell. Price \$1.00.



Round Bottom Shell and Grit Box

ROUND BOTTOM DRY MASH HOPPER



Round Bottom Hopper

Is made of heavy galvanized iron 24 inches long and 30 inches high. Has a screen front so the chicks can get the dry mash and not waste. It is the best dry mash feeder on the market. Can be hung on the fence or shed free from dirt and with the covers rain can not get into the feed.

Price, 18-inch, \$2.25, wt. 8 lbs.
24-inch, \$3.00, wt. 10 lbs., f. o. b. Los Angeles.

GREAT WESTERN DRY MASH FEEDER



This feeder comes in three sizes: 18, 24, and 30. Made of heavy iron. Price—18 in., \$1.75, wt. 7 lbs.; 24 in. \$2.00, wt. 9 lbs.; 30 in. \$2.25, wt. 10 lbs., f. o. b. Los Angeles.

Great Western Dry Mash Feeder

PETTEY'S POULTRY PUNCH

One of the most convenient punches made. It is small and easy to operate, cutting a clean hole every time. Price, 25c; postpaid 30c.



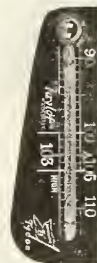
Easy Poultry Punch

Made of brass, so simple in construction any one can use this punch with ease. Price 50c, postpaid.



Easy Poultry Punch

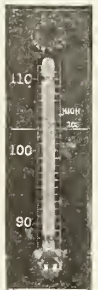
INCUBATOR AND BROODER THERMOMETERS



No. 2—90c



No. 3—\$1.00

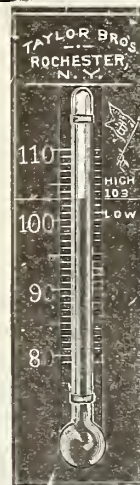


No. 4—90c

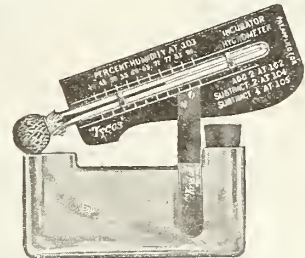
Many persons using Incubators and Brooders fail to understand the importance of having a thoroughly tested and reliable thermometer. Many a fine hatch is lost, and many a fine brood of chicks killed by using a poor thermometer. Use great care in purchasing a perfect thermometer. Our thermometers are thoroughly tested and accurate.

Our Brooder Thermometers are in two styles, half round and flat. Made by Tycoos Co. and guaranteed correct. Price of the half round Brooder Thermometer, packed \$1.00, postpaid.

No. 1 all glass Incubator Thermometer. Price \$1.25 postpaid.



Flat Brooder Thermometer
75c postpaid



Tycoos Hygrometer

MOISTURE REQUIREMENTS

The amount of moisture required, during the period of incubation, varies from 65 per cent to 53 per cent. For the convenience of our friends and patrons we give the following table of the percentage of moisture best adapted to each week of incubation:

First week there should be about 65 per cent of moisture present;

Second week there should be about 60 per cent of moisture present;

Third week there should be about 55 per cent of moisture present;

At the time of hatching, about 50 per cent of moisture. Price, \$2.00, postpaid.



No. 1 All Glass

FEEDING PANS AND DRINKING FOUNTS

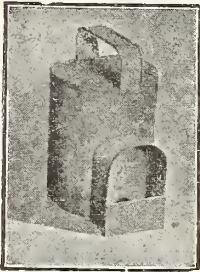
Made of heavily galvanized iron. Best of workmanship. Very sanitary and easily cleaned. Chicks cannot get into them or upset them.

- 1 pt. size, Wt. 1 lb. 20c each
 1 qt. size, Wt. 1½ lbs. 35c each
 2 qt. size, Wt. 1¾ lbs. 45c each
 4 qt. size, Wt. 2 lbs. 60c each
 6 qt. size, Wt. 2½ lbs. 80c each



F. O. B. Los Angeles

FLAT BACK WALL CHICKEN FOUNT



This fount can be used very conveniently for Pigeons, Chickens, Ducks and other poultry. Well made of heavy galvanized iron. To hang on the wall at any convenient height from the ground.

- 1 qt. size, Weight ½ lb. 35c each
 2 qt. size, Weight 1 lb. 45c each
 1 gal. size, Weight 1½ lbs. 80c each
 2 gal. size, Weight 3 lbs. \$1.00 each

F. O. B. Los Angeles



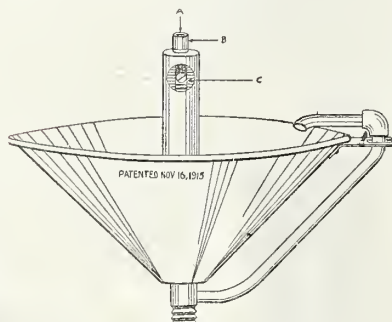
- 1 qt. 35c Wt. 4 lbs.
 2 qt. 45c Wt. 6 lbs.
 1 gal. 60c Wt. 7½ lbs.
 2 gal. 80c Wt. 9½ lbs.

If ordering by mail or express add 25c for packing charges for one or more founts.

F. O. B. Los Angeles



Postpaid 20c.
Star Fount



THE AUTOMATIC WATER FOUNTAIN

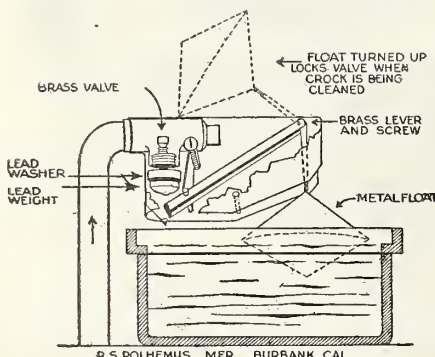
THE AUTOMATIC WATER FOUNTAIN

It will refill and stop automatically when the water reaches its proper level. Every fountain guaranteed and replaced if found defective in any way. \$1.75 each. Weight 2½ lbs. F. O. B. Los Angeles.

Prices subject to change without notice.

AUTOMATIC WATER BOY

Water Boy consists of brass valve and stem. No fiber, leather or springs to get out of order. All floats are of metal and will last a long time. Every one guaranteed. Price with metal float, \$1.00. In one dozen lots 90c ea. f.o.b. Los Angeles. Weight ½ lb.



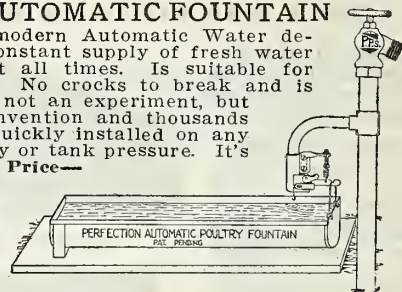
R.S. POLHEMUS, MFR. BURBANK, CAL.

PERFECTION AUTOMATIC FOUNTAIN

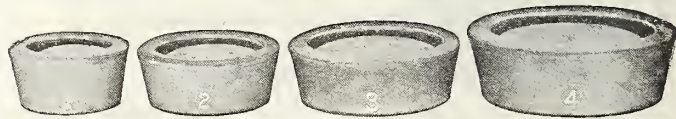
This is the most modern Automatic Water device which keeps a constant supply of fresh water before your fowls at all times. Is suitable for hens or baby chicks. No corks to break and is easily cleaned. It is not an experiment, but a highly successful invention and thousands are in use. Can be quickly installed on any pipe and works on city or tank pressure. It's so E. Z. to regulate. Price—

- 24-inch \$2.00
 30-inch 2.25
 36-inch 2.75

F. O. B. Los Angeles



Flanged Edge Feeders. These are made of stoneware and glazed with a flanged edge for feeding rolled barley. The flanged edge prevents rabbit from throwing out the grain and wasting it. Comes in white, glazed.



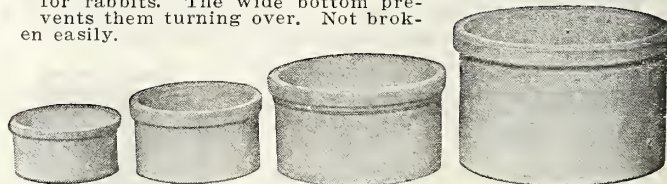
Rabbit Feeders

- No. 1, 15c each, 3 for 35c (1 dozen, \$1.50. Weight 1 lb. (each)
 No. 2, 20c each, 1 dozen, \$2.00 Weight 2 lbs. (each)
 No. 3, 25c each, 1 dozen, \$2.40 Weight 2½ lbs. (each)
 No. 4, 30c each, 1 dozen, \$3.00 Weight 4 lbs. (each)

If ordering by mail or express add 25c to order for packing, etc.

RABBIT DRINKING FOUNTAIN

These fountains are made especially strong and durable for rabbits. The wide bottom prevents them turning over. Not broken easily.



Rabbit Drinking Fountains

- 1 pt. 10c each, 3 for 25c; per dozen \$1.10. Weight 1 lb. each
 1 qt. 15c each; per dozen \$1.50. Weight 2 lbs. each
 ½ gallon, 20c each; per dozen \$1.90. Weight 4 lbs. each
 1 gallon, 30c each; per dozen \$3.00. Weight 4½ lbs. each
 6 qt., 40c each; per dozen \$4.00.
 8 qt., 60c each; per dozen \$6.00.

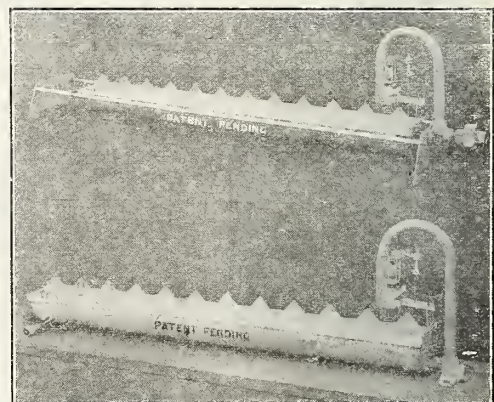
F. O. B. Los Angeles

If ordering by Mail or Express add 25c to order for Packing.

PERFECTION

This Fountain is automatic in arrangement, and can be adjusted at will for any water pressure. It is the most modern and complete Fountain ever offered to the poultry people, and is the result of several years experimenting.

The Perfection is made in three sizes
 24-in. \$2.00)
 30-in. \$2.25)
 36-in. \$2.75)

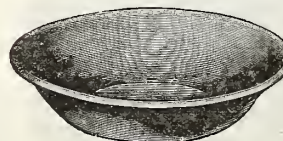


Automatic Baby Chick Fountain
Capacity: 500, 750 and 1,000.

PIGEON NESTS

Fills a long-felt want for all squab breeders. Wood gets filthy and vermin laden in a very short time. Iron or earthen-ware is cold and bad for the birds.

Indurated Fibre is lighter than wood, will not warp or break, has a brown finish (not polished), which makes it easy to clean. Impervious to vermin or moisture and is a non-conductor of either heat or cold. A money-saver, and will increase the hatch. Sanitary, handsome, practically indestructible and cheap. Has hole in bottom for screw to hold nest firm and steady. Price 15c each.



EGG BOXES AND SHIPPING BOXES



Self-Locking
Egg Carton

This Self-Locking Carton holds 2 rows of 6 eggs each and will pack in a standard egg case of 30 dozen. It is always ready to hand out, thus saving handling.

	Wt.	Price
12 Boxes	2 lbs.	\$.25
25 Boxes	3½ lbs.	.40
50 Boxes	7 lbs.	.75
100 Boxes	14 lbs.	2.00
500 Boxes	70 lbs.	8.50
1000 Boxes	140 lbs.	16.50

Any of these articles ordered by Parcel Post and postage.

A. & M. SUPERIOR EGG BOX

This carton is 2 eggs wide by 6 eggs long, painted with plain color inside. Strong and durable.

	Wt.	Price
12 Boxes ...	2 lbs.	\$.25
25 Boxes ...	4 lbs.	.45
50 Boxes ...	7 lbs.	.70
100 Boxes ...	14 lbs.	1.25
500 Boxes ...	70 lbs.	6.25
1000 Boxes ...	140 lbs.	12.50

F. O. B. Los Angeles



A. & M. SWANEE EGG BOX

This carton holds 2 rows of 6 eggs long. The box is of a blue lining, also the fillers are of blue color. This makes the egg show nice, white and clean. This is the most satisfactory box you can buy.

	Wt.	Price
12 Boxes ...	2 lbs.	\$.25
25 Boxes ...	4 lbs.	.50
50 Boxes ...	14 lbs.	1.00
100 Boxes ...	14 lbs.	1.50
500 Boxes ...	70 lbs.	6.75
1000 Boxes ...	140 lbs.	13.50

F. O. B. Los Angeles

WALLACE EGG BOX

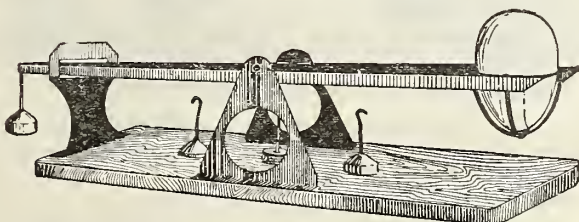
It is the one carrier that will safely deliver the goods irrespective of jars, jolts, or pressure coming from any angle. When the carrier is packed for shipment you can stand on top, bottom, ends, or sides without its buckling or crushing.

15 egg size, 30c each.

	Price per doz. Boxes	Wt. per doz. Boxes
1 Doz. Size, \$.25 each,	\$2.30	10 lbs.
2 Doz. Size, .35 each,	3.60	22 lbs.
3 Doz. Size, .50 each,	4.80	30 lbs.
6 Doz. Size, 1.00 each,	10.20	60 lbs.
15 Doz. Size, 1.90 each,	21.00	150 lbs.

F. O. B. Los Angeles

GILT EDGE EGG SCALE



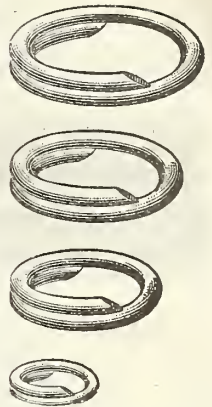
Is the only Egg Scale made that will give the correct grading within a range of 17 to 30 ounces to the dozen. Standards of eggs as follows: No. 1 Pullet, 20 to 22 oz.; No. 2 Pullet, 19 to 20 oz. Price \$2.00, postpaid \$2.35.

LEG BANDS FOR POULTRY

Spir-ol Leg Bands are made in six colors and all sizes, and are put on and taken off like a key ring. Can't drop off. Colors are black, white, red, yellow, blue, green, purple, light blue, maroon and pink. In ordering please state color wanted, also name of breed, Leghorn, Rocks, Rhode Island Reds or Turkeys. It enables us to fill the order satisfactorily. Prices:

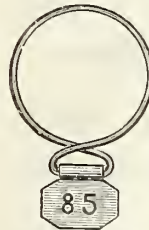
12 Bands for.....	\$.15 postpaid
25 Bands for.....	.25 postpaid
50 Bands for.....	.50 postpaid
100 Bands for.....	.75 postpaid
500 Bands for.....	3.60 postpaid
1000 Bands for.....	7.00 postpaid

Spir-ol Band for Chick, Bantam and Pigeon size as follows: 12 for 15c; 25 for 25c; 50 for 40c; 100 for 65c; 500 for \$3.00; 1000 for \$5.25. These bands come in the same colors as given above for Poultry Bands.



Spir-ol Leg Band

CLIMAX LEG BANDS



This Band is easy to put on or remove, no tools required. The rings are made of spring brass, and so bent that the tag acts as a clasp holding them securely in place. Made in three sizes. In ordering always mention the variety of fowl wanted for. Prices (15c for 12) (25c for 25) (50c for 50) (75c for 100) postpaid.

FLAT ALUMINUM LEG BANDS

These bands fit any variety of fowls.

Price—(12 for 15c) (25 for 30c) (50 for 50c) (100 for 75c) postpaid.



SMITH SEALED BANDS

Smith Sealed Bands were put on the market for a purpose. That purpose was to prevent dishonesty in the handling of scored birds and to protect the purchaser of same. Price—12 for 25c) (25 for 50c) (50 for 85c) (100 for \$1.50) postpaid.

SPATZ PIGEON BANDS

The Easy-On Color Band.—The new, up-to-date Easy-On Color Band is the simplest, cheapest and easiest to apply band on the market. Made from the best celluloid and aluminum it will give long service. With a little care it can be taken off and used several times. Price—(5c pair) (25 pair \$1.00) (60 pair \$2.00) postpaid.

WIRE SHIPPING COOP

This Steel Wire Shipping Coop is made from the 1/8-inch steel wire electrically welded, has no loose joints, is very light and handy to use. It has a sliding gate at top where birds are put in. Has strong hardwood bottom floor, wired on to frame, and in fact contains just what any poultry

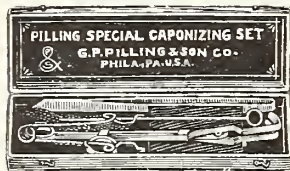


dealer would want to ship chickens in. It is almost indestructible, being made so strong, and on account of being so light cost but little freight or express. They last for years. Price, chicken size, \$3.55. Weight 20 lbs. Turkey size, \$4.80. Weight 25 lbs.

POULTRY INSTRUMENTS

CAPONIZING SET

This set is one of the latest design. It is a combination of tools that can be used with one hand and seldom causes the operator to slip and cause the loss of the bird.



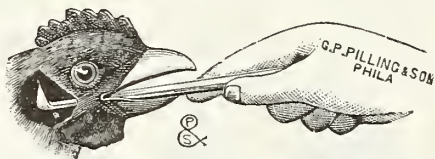
We carry the following sets:
 Pillings Cornell\$5.00
 Pillings Farmer 4.00
 Pillings Special 4.50

We suggest that you use either the Cornell or Farmer. They are packed in a fine oak case. Each set contains full instructions.

PILLING ANGULAR KILLING KNIFE



By simply turning the wrist the jugular vein and spinal cord are cut, thereby bleeding the fowl, allowing the feathers to be removed without using water. 75c, postpaid.



Showing the Angular Killing Knife

PILLING FRENCH POULTRY KILLING KNIFE



Every poultry raiser should have one of our Killing Knives. They are made of a finely tempered instrument steel with nicked handle; will last a lifetime. Sent postpaid on receipt of 75 cents. Don't wait! Send for one now! Sent securely packed by mail on receipt of price.

Metal Nest

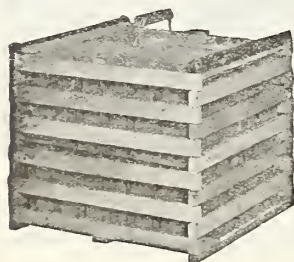
Single \$1.75; 2 compartment, \$2.50.
 Wt. 7 lbs.; 3 compartment \$3.00.
 Wt. 9 lbs. F. O. B. Los Angeles.



A. & M. ROOST HANGERS



This hanger made of iron, strong and durable. Has a bowl which you fill with liquid lice killer, thus preventing lice and mites from getting on the roost and then on the bird. You should not be without them. Price 75c postpaid.



HUMPTY-DUMPTY EGG CARRIER

One of the handiest egg carriers on the market. This carrier will hold twelve (12) dozen eggs. Can be folded flat for shipment, and is made of strong but light wooden slats fastened with strong steel wires. Very handy and something every poultryman should have. Price, 90c each, f. o. b. Los Angeles. Weight 6 lbs.

A & M LICE KILLING NEST EGGS

Our Lice Killing Nest Eggs are almost an exact imitation of the real chicken eggs, and contain a powerful disinfectant which is guaranteed to expel lice and vermin. Put up in boxes of one dozen each, at \$1.00 per box. Weight 2 lbs.

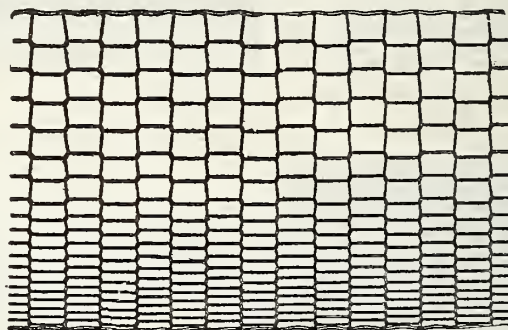


CHINA NEST EGGS

We handle only the best grade of glass eggs, strong and durable. 60c dozen; 75c postpaid.

Warner Junior Poultry Fencing

Warner Junior Poultry Fence is made of No. 18 galvanized wire with No. 14 wire top and bottom, stay wires placed 4½ inches apart. At the bottom of the fence mesh is 1¼ inch and gradually widens as the top is reached.



THE WARNER JUNIOR POULTRY FENCE

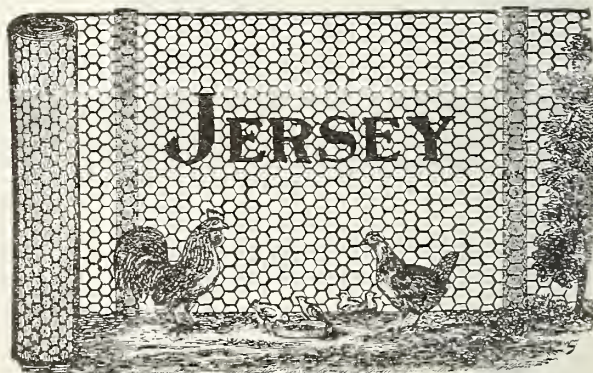
Put up in 10 rod rolls.

3 ft. wide, per roll.....	\$4.75
4 ft. wide, per roll.....	5.40
5 ft. wide, per roll.....	6.25
6 ft. wide, per roll.....	6.90

Subject to market fluctuations.

Jersey Poultry Fencing

This wire is made of the full 20 gauge hand drawn steel wire galvanized after weaving. Each roll contains 150 running feet.



On account of great changes in Galvanized Wire we are unable to quote prices. But will be pleased to quote you prices on all sizes on application.

We carry the following sizes:

1 ft. 2 inch mesh.	1 ft. 1 inch mesh.
1½ ft. 2 inch mesh.	1½ ft. 1 inch mesh.
2 ft. 2 inch mesh.	2 ft. 1 inch mesh.
3 ft. 2 inch mesh.	3 ft. 1 inch mesh.
4 ft. 2 inch mesh.	4 ft. 1 inch mesh.
5 ft. 2 inch mesh.	5 ft. 1 inch mesh.
6 ft. 2 inch mesh.	6 ft. 1 inch mesh.

SEMI-SOLID BUTTERMILK

For

YOUNG CHICKS, BROILERS AND LAYING HENS



Showing Pen of Laying White Leghorns Fed on Semi-Solid Buttermilk

SEMI-SOLID BUTTERMILK (Condensed)

Feeding experiments within the last few years by poultry men all over the country who have used SEMI-SOLID BUTTERMILK, and a great many of the Agricultural Experiment Stations, have demonstrated that butter milk as a feed is of immense value to the POULTRY RAISER and the EGG PRODUCER.

SEMI-SOLID BUTTERMILK is nothing but PURE BUTTERMILK as it comes from the churn, PROPERLY SOURED, from which the water or moisture is removed by vacuum evaporation until a semi-solid consistency is attained.

One pound of SEMI-SOLID BUTTERMILK and seven pounds of water, or one gallon SEMI-SOLID and seven gallons of water, well mixed, makes a product which equals regular buttermilk in feed value. In fact, it is far better and safer than raw buttermilk, as our process of condensing eliminates all the injurious bacteria often found in raw buttermilk. SEMI-SOLID is pasteurized and sterilized, making the safest feed known.

Is put up in kegs, half-barrels and barrels, properly steamed and sterilized. Upon using it, the head should be removed, as the product is so thick it will not flow or run out of the bung hole. After the container is opened, the product should be used from day to day. It will keep until used, but as it is like preserves, should be used daily after it is opened. Also the top of the barrel should be left open and a piece of thick paper (preferably parchment) should be pressed down tight on the product when not in use, preventing the air from reaching it, and keeping it fresher.

Sold only in original packages, viz.—Kegs, ½ bbls. and barrels.

Price—Per keg, 84 lbs. net.....\$ 6.30
Price—Per ½ bbl., 225 lbs. net..... 15.70
Price—Per bbl., 503 lbs. net..... 32.69

F. O. B. Los Angeles

Poultry Remedies and Feeds

PRATT FOOD CO. STOCK AND POULTRY REMEDIES

	Retail Each		Retail Each
Lice Killer (Powder) ..	.30	Red Mite Special 1 qt..	.60
Lice Killer (Powder) ..	.60	Red Mite Special 2 qt..	1.00
Lice Killer (Liquid)		Roup Remedy .....	.30
Quarts .....	.60	Roup Remedy .....	.60
½ gallons	1.10	Roup Remedy	1.20
Gallons	2.60	Sorehead Chicken-Pox	
5-gallon cans	7.80	Remedy .....	.30
Poultry Regulator .....	.30	Sorehead Chicken-Pox	
Poultry Regulator .....	.60	Remedy .....	.60
Poultry Regulator	1.20	Scaly Leg Remedy.....	.30
Poultry Regulator		Scaly Leg Remedy.....	.60
12 lb. sacks	2.00	White Diarrhea Remedy	.30
25 lb. sacks	3.00	Worm Powder .....	.60
50 lb. sacks	5.50	Worm Powder	1.20
100 lb. sacks	10.00		

DR. HESS & CLARK REMEDIES

Dip and Disinfectant,		2½ lb. pkgs. ....	.60
Small .....	.50	Poultry Panacea,	
Quarts .....	.75	1½ lb. pkgs. ....	.30
2-quarts	1.00	3 lb. pkgs. ....	.60
1-gal	1.75	7 lb. pkgs.	1.25
5-gal. can	6.75	25 lb. pail	3.00
Fly Chaser, 1 quart size	.65	Roup Remedy, (liquid)	
Fly Chaser, 2 quart size	1.10	4 oz. cans .....	.25
Fly Chaser, 1 gal. size..	1.80	Roup Remedy, (powder)	
Instant Louse Killer,		4 oz. cans .....	.25
1 lb. pkgs. ....	.30	10 oz. cans .....	.50

BARNES' REMEDIES

Poultry		Anti-Diarrhea .....	.50
A & M Lice Paste.....	.25	Anti-Diarrhea	1.00
A & M Lice Paste.....	.50	Anti-Slobber .....	.50
Pox Remedy	1.00	Anti-Slobber	1.00
White Diarrhea Remedy	.25	Cold Specific .....	.50
White Diarrhea Remedy	.50	Cold Specific	1.00
Worm Emulsion .....	.50	Corrective .....	.50
1 pint	1.00	Corrective	1.00
1 quart	1.25	Digestive Tablets .....	.50
1 gallon	3.00	Hockline .....	.25
5 gallon	12.50	Liver Tablets .....	.25
For Rabbits		Rabbit Tonic .....	.50
Anti-Canker .....	.50	Rabbit Tonic	1.00
Anti-Canker	1.00	Vent Ointment .....	.50



Phenola is a disinfectant white paint, made in powdered form. It cannot be compared with either white-wash or kalsomine. It will outlast them as a white paint and at the same time disinfect the surface to which it is applied.

Phenola does not peel off or crack. It is especially prepared for use in poultry houses, stables, cow barns, out houses, and factories. It is also adapted for use in dairies and creameries, as it will not taint butter or milk.

Direction for using: Either hot or cold water may be used. For general work we recommend one to two pounds of Phenola to each gallon of water. Thoroughly mix and apply with brush or spray.

Price—

1-lb. packages ..	.30 each
5-lb. packages ..	1.25 each
10-lb. packages ..	2.25 each
25-lb. packages ..	5.00 each

All above f. o. b. Los Angeles.

LITERATURE FOR POULTRYMEN

	Price	Pstpd.		
American Standard of Perfection	\$2.00	\$2.20	Poultry Architect, by Fiske .....	.75
Artificial Incubation and Brooding	1.00	1.15	Poultry Account Book .....	.25
Barred, White, Buff, Plymouth Rocks	1.00	1.15	Poultry Culture	1.50
Bantam Fowl .....	.50	.60	Practical Poultry Keeping by Wright	2.00
Broilers and Squabs .....	.60	.70	500 Questions and Answers, by J. W. Darrow..	.25
California Poultry Practice, by Mrs. Susan			Rabbits, Fur Bearing, by Ritchey .....	.50
Swaygood	1.00	1.20	Rabbit Pedigree Blanks .....	.25
Call of the Hen, by Walter Hogan	2.00	2.25	Rabbit, The Western Book, by Ritchey .....	.60
Chick Book .....	.50	.60	Rabbit, 9th edition .....	.25
Diseases of Poultry .....	.60	.70	Rabbit Culture and Standard, by Deardoff....	.60
Duck Culture, by James Rankin .....	.75	.85	Reliable Poultry Remedies .....	.25
Ducks and Geese .....	.75	.85	Rhode Island Reds .....	.75
Hog Book, by W. S. Guilford	2.00	2.25	Successful Poultry Keeper	1.00
Leghorns, Brown, White and Buff	1.00	1.15	The New Egg Farm, by H. H. Stoddard.....	1.50
National Standard Squab Book	1.00	1.15	Turkeys, All Varieties .....	.75
Pigeon, The, 9th edition, by Meersch .....	.25	.35	Two Hundred Eggs a Year Per Hen, by Depuy ..	.50
Poultry Houses and Fixtures	1.00	1.15	The Wyandottes	1.00
			Western Poultry Book	1.10

DAILY EGG RECORD

[illegible]

"EGGS"

ATTENTION! Farmers, Poultry Men, Egg Producers and Consumers. A Great Discovery, Momentous In Economic Possibilities

THE FLEMING EGG PRESERVER

Patented in United States and Canada

Makes 15 cent Eggs worth 50 cents—Costs 2 cents dozen. Preserves Spring Eggs for Winter Use Fresh and Sweet as day they were laid, without Cold Storage or Refrigeration.

Discounts All Other Processes Ten to One. An Absolutely Reliable and Unqualified Success

2 oz. tins sufficient to preserve 50 doz. eggs, 85c postpaid.
4 oz. tins sufficient to preserve 100 doz. eggs, \$1.35 postpaid.

Devonshire's Earth Salts

Especially for Poultry, Rabbits, Cattle and Horses

Major Devonshire pointed out in 1905 that it would be necessary to artificially manufacture and supply the Earth Salts to domestic stock, poultry and dogs kept in confinement or on limited range, and the formula, on which Devonshire's Earth Salts are based, is the work of a leading American Chemist.

The consistently favorable reports, during the past eight years, of Agricultural Chemists, Veterinarians and Stock and Poultry Experts in many parts of the world, as to the unique value of these Earth Salts, have established Devonshire's Earth Salts as a great discovery in Agricultural Science.

Some Diseases Caused by a Shortage of Earth Salts, Available to Stock and Poultry.

(1) **Horses, Cattle, Pigs, Sheep and Dogs.** Debility, abortion, sterility, mange, insufficient or worthless milk to suckle the offspring, milk fever, etc.

(2) **Poultry.** Poor egg yield, dead-in-shell chicks, weakening chicks, infertile eggs, sterility in male birds, poor feathering, leg weakness, debility, leading to the attacks of lice, roup, diphtheria, catarrh, diarrhoea and other diseases, which are always preceded by a debilitated condition, due to a shortage of Earth Salts, if the management is in other respects rational.

Summary. If the germicide (or killers of disease germs which settle in the blood) are healthy, disease is impossible. Earth Salts, as combined in Devonshire's Earth Salts, enable these germicides to functionate efficiently, and the therefore the elixir vitae—the most vitally important factor in the feeding of stock and poultry in confinement.

One tablespoonful per day for twenty fowls is about the right proportion. Instructions for feeding are printed on every package. We also have pamphlets with full information for the asking.

Dogs. A convenient way to feed a dog is to put ½ teaspoonful of the Earth Salts daily in the feed. Where puppies at weaning time feed out of one dish, a ½ teaspoonful in the food in the dish will be about right. The Earth Salts are quite harmless, but if too much is given, the dogs may refuse the food.

Rabbits. Cures Slobbers, Snuffles, Mange, Ear Canker, all digestive disturbances, refusal to eat, Abscesses and difficulty in moulting.

Devonshire's Earth Salts for stock and poultry are put up in packages of three sizes.

Devonshire's Earth Salts increase the milk yield of cows.

Devonshire's Earth Salts are assimilated by all living things in the same way as the natural salts in the foods.

Devonshire's Earth Salts. Tuberculosis is due to a shortage of the earth salts in the body.

Price, 1-lb. packages, postpaid 60c.

Price, 2½-lb. packages, \$1.15, postpaid.

Price, 10-lb. packages, \$3.50 f. o. b. Los Angeles.

Rheumatism is due to an excess of acids in the body. **Devonshire's Earth Salts** alone enable nature to absorb these acids and invariably cure this disease.

Dyspepsia and all forms of Nervous Disease—The Earth Salts alone create the gastric juice and nourish the nervous system.

WHY DEVONSHIRE EARTH SALTS FOR HUMAN USE?

Because They Supply the Shortage in Your Food

Devonshire's Earth Salts for human use are the only known means of supplying this shortage. They prevent and cure disease.

Liver and Kidney Troubles, etc., are also due to a lack of the earth salts.

Children. The Rising Generation. Invaluable to promote the healthy growth of children after weaning and during the teething period.

Devonshire Earth Salts are a food and not a medicine. Are absolutely harmless, being a copy of the natural salts found in all foods. Sold in packages for human use. **Price in powder form, postpaid 85c; in boxes with 120 capsules, postpaid \$1.10.**

We have handled **Devonshire's Earth Salts** for the past four years, both for Stock and Human food, and it not only has given general satisfaction, but we have many testimonials of remarkable cures to human beings resulting from its use. Therefore we do not hesitate to recommend it.

AGGELER & MUSSER SEED CO.

Announcement

IN order to have the necessary space required for our increased business, we have leased the large warehouse at 1918-24 East 15th Street, located about midway between Alameda and Santa Fe Streets.

Here we have 40,000 feet of floor space all on one floor.

Our cleaning mills will be built in the new warehouse so that when completed we will have the best facilities in the state for cleaning all kinds of seed.



Out of the Car Into the Cleaner.
This is a Continuous Performance Throughout the Year

A broad paved street in front of the building will give convenient access for auto trucks and we have ample railroad facilities at the rear for handling carlots.

Together with the warehouse situated at the rear is a plot of ground which will be made into a trial garden where we will grow many plants for demonstration purposes.

This will be of inestimable value to our salesmen and to any one who may be interested in seeing it.

THIS CATALOG

WE are printing 100,000 copies at an expense of \$12,000. It will cost another \$3000 to mail them to you. If, since last year you have changed your address and have not notified us, the catalog we have mailed you will cost three cents to have it returned and another three cents to send it to another person. Therefore when you change your address kindly notify us. If you have no use for this catalog please pass it to someone who will be interested in it. It is conservative to estimate that at least 200,000 individuals will have benefited by this catalog in greater or lesser degree, either in an educational way or financially and that is just as much our purpose as our own financial success; that is why we devote half of all the space to educational items.

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The AGGELER & MUSSER SEED CO. Inc.
620 South Spring Street, Los Angeles, Cal., U.S.A.

Please forward the following ORDER for amount enclosed (write your name and address distinctly)

Name

Street P. O. Box

Post Office R. F. D. No.

County State.....

Forward Goods by

State whether by **Mail**, **Express** (and company),
Freight (and route), **Steamer** (and line).

Name of Station or Exp. Office.....

Amount Enclosed.

P. O. Money Order

Exp. Money Order.....

Draft

Cash

Stamps,

Total

Date, 191.....

NOTICE—We give no warranty, express or implied, as to description, quality, productiveness or any other matter of any seeds or bulbs we send out and we will not be in any way responsible for the crop. If the purchaser does not accept the goods on these terms, they are to be returned at once. Aggeler & Musser Seed Co. (Inc.).

[illegible]

(OVER)

EXTRA ORDER SHEETS AND RETURN ENVELOPES FURNISHED ON REQUEST

NAME OF ARTICLE WANTED

Brought forward

POSTAGE

Garden Seeds priced by the packet, ounce, one-fourth pound and pound are postage paid. Peas, Beans, Onion Sets, Corn, Grass and Field Seeds and Sundry Articles are not postpaid. In ordering one pound lot, add ten cents per pound for postage and packing, and on larger quantities apply parcel post charges.

DOMESTIC PARCEL POST RATES

On Seeds, Plants, Bulbs, Roots, Books, Tools, etc.
within the U. S. and Possessions

	First pound or fraction	Each additional pound or fraction
First Zone, Los Angeles or 50 miles thereof	5c	1c
Second Zone, within 50 to 150 miles	5c	1c
Third Zone, within 150 to 300 miles	6c	2c
Fourth Zone, within 300 to 600 miles	7c	4c
Fifth Zone, within 600 to 1000 miles	8c	6c
Sixth Zone, within 1000 to 1400 miles	9c	8c
Seventh Zone, within 1400 to 1800 miles	11c	10c
Eighth Zone, all over 1800 miles	12c	12c

Please do not ask questions on this Order Sheet, but kindly write them and all communications requiring an answer on a separate sheet of paper and inclose with your order. Be sure that your Full Name and Address are on Both Letter and Order.

This space is for remarks about your order.

Please forward the following **ORDER** for amount enclosed (write your name and address distinctly)

(OVER)

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This space is for remarks about your order.

The following is a calendar for the general planting of vegetables, but, owing to the various soils and climatic conditions, this calendar cannot be applied to every locality, even in Southern California, for which this calendar is intended.

JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCTOBER	NOVEMBER	DECEMBER
Asparagus *Beans Brussels *Sprouts Cabbage Carrots Chervil Chicory Corn Salad Cress *Egg Plant Horse *Radish Kale Kohl Rabi Lettuce Mustard *Onions Parsley Peas *Peppers *Potatoes Radish Rhubarb Salsify Spinach, Winter *Tomato Turnip	Asparagus Beets *Beans Cabbage Carrots Celery Chervil Chicory Corn Cress Corn Salad *Cucumbers *Egg Plant Horse *Radish Kale Kohl Rabi Lettuce Mustard *Onions Parsley Peas *Potatoes Radish Rhubarb Salsify Spinach, Winter *Tomato Turnip	Artichoke Asparagus Beets *Beans Cabbage Chives Chervil Chicory Corn, Sweet Cress Cucumbers *Egg Plant Kale Lettuce Melons, Musk & Water Okra *Onions Parsley Peas *Potatoes Pumpkin Radish Rhubarb Salsify Spinach, Summer *Tomato Turnip	Artichoke, Seed Asparagus Beets *Beans Cabbage Carrots Chervil Chicory Corn, Sweet Cress Cucumbers *Egg Plant Kale Lettuce Melons, Musk & Casabas Okra *Onions Parsley Peas *Potatoes Pumpkin Radish Rhubarb Salsify Spinach, Summer *Tomato Turnip	Artichoke, Seed Asparagus Beets *Beans Cabbage Carrots Chervil Chicory Corn, Sweet Cress Cucumbers *Egg Plant Kale Lettuce Melons, Musk & Casabas Okra *Onions Parsley Peas *Potatoes Pumpkin Radish Rhubarb Salsify Spinach, Summer *Tomato Turnip	Artichoke, Seed Asparagus Beets *Beans Cabbage Carrots Chervil Chicory Corn, Sweet Cress Cucumbers *Egg Plant Kale Lettuce Melons, Musk & Casabas Okra *Onions Parsley Peas *Potatoes Pumpkin Radish Rhubarb Salsify Spinach, Summer *Tomato Turnip	Beets Beans Cabbage Carrots Cauliflower Cucumbers *Egg Plant Kale Kohl Rabi Leek Lettuce Melons, Musk & Casabas Okra Onion Sets Parsley Peas *Peppers Potatoes Pumpkin Spinach, Summer *Tomatoes	Artichoke, Seed Beets *Beans Brussels *Sprouts Cabbage Carrots Cauliflower Chervil Chicory Cress *Egg Plant Endive *Kale Kohl Rabi Leek Lettuce Mustard *Onion Parsley Peas *Potatoes Radish Rhubarb Salsify Spinach, Turnip	Artichoke Beets *Beans Brussels *Sprouts Cabbage Carrots Cauliflower Chervil Chicory Cress *Egg Plant Endive *Kale Kohl Rabi Leek Lettuce Mustard *Onion Parsley Peas *Potatoes Radish Rhubarb Salsify Spinach, Turnip	Beets *Beans Brussels *Sprouts Cabbage Carrots Cauliflower Chervil Chicory Cress *Egg Plant Endive *Kale Kohl Rabi Leek Lettuce Mustard *Onion Parsley Peas *Potatoes Radish Rhubarb Salsify Spinach, Turnip	Artichoke, Plants Asparagus *Beans Brussels *Sprouts Cabbage Carrots Cauliflower Chervil Chicory Cress *Egg Plant Endive *Kale Kohl Rabi Leek Lettuce Mustard *Onion Parsley Peas *Potatoes Radish Rhubarb Salsify Spinach, Turnip	

*Plant in frostless sections only
†Plant seed in hot bed
‡Plant both seed and plants

§Plant in low, heavy land.
¶In the Colorado Desert.

Calendar for Planting Flowers

JANUARY Sow Seed	FEBRUARY Sow Seed	MARCH Sow Seed	APRIL Sow Seed	MAY Sow Seed	JUNE Sow Seed
Antirrhinum Centaurea Calliopsis Celosia Chrysanthemum Salvia Sweet Peas Transplant Carnation Petunia Pansy Stocks Shasta Daisy Verbena Bulbs Anemones Cannas Callas Dahlia Easter Lilies Gladiolus Narcissus Ranunculus	Antirrhinum Asters Calliopsis Celosia Chrysanthemum Salvia Sweet Peas Transplant Carnation Petunia Pansy Stocks Shasta Daisy Verbena Bulbs Callas Cannas Dahlia Gladiolus Tuberoses	Asters Balsam Centaurea Dianthus Marigold Nasturtium Snap-Dragon Sweet Peas Zinnia Transplant Asters Celosia Centaurea Calliopsis Salvia Shasta Daisy Verbena Bulbs Callas Cannas Dahlias Gladiolus Tuberoses	Ageratum Balsam Cosmos Centaurea Coreopsis Celosia Daisies Nasturtium Poppies Snap-Dragon Zinnia Transplant Asters Antirrhinum Centaurea Calliopsis Chrysanthemum Celosia Salvia Bulbs Amaryllis Cannas Dahlia Gladiolus Tuberoses	Carnation Cosmos Coreopsis Candytuft Centaurea Daisies Digitalis Forget-me-not Gillardia Marigold Nasturtium Petunia Poppies Salpiglossis Scabiosa Transplant Asters Antirrhinum Balsam Centaurea Dianthus Marigold Snap-Dragon Zinnia Bulbs Amaryllis Cannas Dahlia Gladiolus Tuberoses	Carnation Cosmos Coreopsis Candytuft Cineraria Centaurea Digitalis Daisies Forget-me-not Gillardia Marigold Phlox Petunia Poppies Salpiglossis Transplant Ageratum Balsam Carnation Cosmos Centaurea Coreopsis Celosia Daisies Hollyhock Snap-Dragon Violets Bulbs Cannas Gladiolus
JULY Sow Seed	AUGUST Sow Seed	SEPTEMBER Sow Seed	OCTOBER Sow Seed	NOVEMBER Sow Seed	DECEMBER Sow Seed
Antirrhinum Canterbury Bells Centaurea Cosmos Lobelia Pansies Stocks Transplant Carnation Cosmos Coreopsis Candytuft Centaurea Daisies Digitalis Forget-me-not Gillardia Marigold Phlox Petunia Salpiglossis Scabiosa Violets	Columbine Calendula Canterbury Bells Cosmos Lobelia Pansies Pinks Primula Petunia Verbena Transplant Carnation Cosmos Coreopsis Candytuft Cineraria Centaurea Digitalis Daisies Gillardia Marigold Phlox Petunia Salpiglossis Violets	Carnation Columbine Calendula Candytuft Forget-me-not Pansies Stocks Sweet Peas, Xmas. Transplant Antirrhinum Canterbury Bells Centaurea Cosmos Lobelia Pansies Stocks Violets Bulbs Callas Freeseas Iris Climbing Vines Australian Pea Vine Cobea Scandens Kudzu Vine Moon Flower Morning Glory Passion Flower Smilax Virginia Creeper	Coreopsis Centaurea Cineraria Forget-me-not Larkspur Pansies Stocks Sweet Peas Transplant Cineraria Columbine Calendula Lobelia Pansy Pinks Primula Petunia Verbena Bulbs Anemones Callas Easter Lilies Freeseas Hyacinths Iris Narcissus Ranunculus Tulip	Carnation Centaurea Larkspur Pansies Sweet Peas Stocks Transplant Carnation Columbine Calendula Candytuft Forget-me-not Pansies Stocks Bulbs Anemones Callas Easter Lilies Freeseas Hyacinths Iris Narcissus Ranunculus Tulips Mignonette may be sown all the year around.	Sweet Peas Transplant Coreopsis Centaurea Cineraria Larkspur Pansies Stocks Bulbs Anemones Callas Cannas Easter Lilies Freeseas Hyacinth Iris Narcissus Ranunculus Tulip Border Plants Alyssum Ageratum Begonias Coleus Geranium Shasta Daisy Verbena

5 GIANT ONIONS

1/2 NATURAL SIZE



GIBRALTER



YELLOW AUSTRALIAN



RIVERSIDE SWEET SPANISH



DENIA



WHITE AUSTRALIAN

5 PACKETS, 1 OF EACH VARIETY 50¢

ANGEL & MUSSEY SEED CO.